



SMITHSONIAN INSTITUTION  
U. S. NATIONAL MUSEUM

Vol. 106

Washington : 1956

No. 3366

## SOME CRICKETS FROM SOUTH AMERICA (GRYLLOIDEA AND TRIDACTYLOIDEA)<sup>2</sup>

By LUCIEN CHOPARD<sup>1</sup>

Through the kindness of Dr. Ashley B. Gurney, I have been able to examine an important collection of Grylloidea and Tridactyloidea<sup>2</sup> belonging to the U. S. National Museum.

Three main lots of specimens comprise the collection:

1. Material collected in northwestern Bolivia by Dr. William M. Mann in 1921-1922 while a member of the Mulford Biological Exploration of the Amazon Basin. A list of his headquarters stations and a map of his itinerary are shown by Snyder (1926) and a popular account of the expedition is given by MacCreagh (1926).

2. Material taken at Pucallpa on the Río Ucayali and at other Peruvian localities by José M. Schunke in 1948-1949 and obtained for the U. S. National Museum by Dr. Gurney.

3. Material collected in 1949-1950 at Tingo María, Perú, and nearby localities by Dr. Harry A. Allard, a retired botanist of the U. S. Department of Agriculture who was engaged primarily in collecting plants.

All of the principal collecting sites represented by this material are in the drainage of the Amazon River. Some 500 miles separate the area worked over by Allard and Schunke from that where Mann collected.

A few Brazilian and Chilean specimens are also included.

The following localities are represented:

BOLIVIA: Blanca Flor; Cachuela Esperanza; Cañamina; Cavinás; Coroico; Covendo; Espia; Huachi; Ivón; Ixiamas; Lower Madidi

<sup>1</sup>Of the Muséum National d'Histoire Naturelle, Paris (MNHN).

<sup>2</sup>For classification of the Orthoptera see Chopard (1949).

River; Mapiri River; Reyes; Rosario, Lake Rogagua; Rurrenabaque; Tumupasa.

BRAZIL: Fortaleza; Manáos; Natal.

CHILE: Cerrillos de Tamaya; Puerto Oscuro.

PERÚ: Cerro Azul; Chanchamayo, Department of Junín; Divisoria; Fundo Chela; Fundo Sinchono; Huancayo; "La Merced," Chanchamayo; Pucallpa; Tingo María.

The grylloids from Perú were known by the study made by Caudell (1918) while most of the Bolivian species have been recorded by Bruner (1916) in his paper on South American crickets.

[Since this manuscript was prepared, and after considerable delay in publication, I have contributed another paper on Peruvian crickets (Chopard, 1954) that was based on material collected by the Hamburg South Perú Expedition of 1936. The general features of that material were discussed by Titschack (1951).]

The present collection provides valuable detailed data on the distribution of the grylloids in Bolivia and Perú, from which countries three-fourths of the material has come. The study of the collection does not bring important changes in our knowledge except in the addition of a relatively considerable number of new species. These new species belong especially to the family Trigonidiidae and to the genera *Diatrypa* and *Aphonomorphus* of the Podoscirtinae. The presence of species belonging to the genera *Rhcnogryllus* and *Metioche*, which were not known in South America, is noteworthy. It confirms the fact that those small crickets, living in very damp places, have a very wide geographical distribution.

I have tried to give keys to the American genera of Grylloidea. I trust they will prove of use to American entomologists in spite of unavoidable imperfections.

## Superfamily GRYLLOIDEA

### Family GRYLLOTALPIDAE

#### Key to the American genera

1. Anterior tibiae with two dactyls; anterior trochanter bearing a long process . . . . . **Scapteriscus** Scudder
- Anterior tibiae with four dactyls; anterior femora bearing a short process . . 2
2. Very small and slender species; anterior tibiae with open tympanum. **Gryllotalpella** Rehn
- Larger and much stouter species; anterior tibiae with more or less closed tympanum . . . . . 3
3. Posterior tibiae unarmed or armed with one spine only; branches of the *Sc* in the lateral field of elytra very short and perpendicular to the elytral margin . . . . . **Neocurtilla** Kirby
- Posterior tibiae armed with several spines on the superointernal margin; branches of the *Sc* long, oblique . . . . . **Gryllotalpa** Latreille

**Genus *Scapteriscus* Scudder, 1868*****Scapteriscus oxydactylus* (Perty)**

*Gryllotalpa oxydactyla* Perty, *Delictus animalium articulorum*, p. 118, pl. 23, fig. 9, 1832.

SPECIMENS EXAMINED: BOLIVIA: Huachi (1 nymph), Mann; Ivón, February 1922 (1 ♂), Mann. BRAZIL: Natal, July 1943 (1 ♀), MacCreary. PERÚ: Tingo María, December 1949 (1 ♀), Allard.

***Scapteriscus camerani* Giglio-Tos**

*Scapteriscus camerani* Giglio-Tos, *Boll. Mus. Zool. Anat. Comp. Univ., Torino*, vol. 9, p. 45, 1894.

SPECIMENS EXAMINED: BRAZIL: Manaus (1 ♀), Merrill. PERÚ: Pucallpa, Feb. 15, 1948 (1 ♀), Schunke; Tingo María, November 1949 (1 ♂, 2 ♀♀), December 1949 (2 ♂ ♂, 5 ♀♀, 1 nymph); January 1950 (2 ♀♀), Allard.

***Scapteriscus borellii* Giglio-Tos**

*Scapteriscus borellii* Giglio-Tos, *Boll. Mus. Zool. Anat. Comp. Univ. Torino*, vol. 9, p. 45, 1894.

SPECIMENS EXAMINED: BOLIVIA: Rurrenabaque, November (1 ♀), Mann. BRAZIL: Natal, June 25, 1943 (1 ♀). PERÚ: Tingo María, December 1949 (3 ♂ ♂, 1 ♀), Allard.

**Genus *Neocurtilla* Kirby, 1906*****Neocurtilla hexadactyla* (Perty)**

*Gryllotalpa hexadactyla* Perty, *Delictus animalium articulorum*, p. 119, pl. 23, fig. 9, 1832.

SPECIMENS EXAMINED: BOLIVIA: Rurrenabaque, December (1 ♀), Mann. PERÚ: Fundo Sinchono, Sept. 6, 1947 (1 ♀), Schunke; Tingo María, December 1949 (1 ♀), Allard.

**Family GRYLLIDAE****Key to the American genera**

1. Posterior tibiae armed with strong, immovable, glabrous or feebly pubescent spines (*Gryllinae*) . . . . . 2
- Posterior tibiae armed with long, movable, pubescent spines (*Nemobiinae*) . . . . . 10
2. Posterior femora as long as tarsus and tibia united; body glabrous, shining . . . . . 3
- Posterior femora shorter than the tibia and tarsus united; body usually covered with a fine pubescence . . . . . 4
3. Posterior tibiae presenting a few denticles before the spines of the external margin; male elytron with five oblique veins; ovipositor short but normally conformed . . . . . **Megalogryllus** Chopard

- Posterior tibiae without denticles at base of the external margin; male elytron with two oblique veins; ovipositor rudimentary . . . **Anurogryllus** Saussure
4. Posterior tibiae serrulated before the spines . . . **Odontogryllus** Saussure  
Posterior tibiae without denticles before the spines . . . . . 5
5. Both sexes completely apterous . . . . . **Cophogryllus** Saussure  
Elytra perfectly developed, at least in the male sex . . . . . 6
6. Elytra of the male truncated at apex, without apical field; those of the female strongly reduced or absent . . . . . 7  
Elytra of the male with more or less developed apical field; those of the female never reduced to lateral lobes . . . . . 8
7. Body depressed, pubescent; frontal rostrum narrow . . . **Gryllodes** Saussure  
Body more convex, shining with a scarce pubescence; frontal rostrum wide. **Gryllita** Hebard
8. Posterior metatarsi strongly enlarged, furrowed above, with serrulated external margin; general shape short and stout; anterior tibiae with a large internal tympanum . . . . . **Hemigryllus** Saussure  
Posterior metatarsi not at all enlarged, serrulated on both margins; anterior tibiae with a large external tympanum; when the internal tympanum is present, it is small, round . . . . . 9
9. Small species, with short elytra combined with very long wings (micropterous condition is present); facies of a *Nemobius* . . . . **Miogryllus** Saussure  
Average size of the species larger; elytra and wings not so different in length. **Acheta** Linné
10. Posterior tibiae armed with two apical spurs only on the internal face. **Hygronemobius** Hebard  
Posterior tibiae armed with three apical spurs either side . . . . . 11
11. Pronotum twice as wide as long . . . . . **Argizala** Walker  
Pronotum about  $1\frac{1}{2}$  times as wide as long. **Pterouemobius** Jacobson and Bianchi

### Genus *Megalogryllus* Chopard, 1929

#### *Megalogryllus molinai* Chopard

*Megalogryllus molinai* Chopard, Rev. Chilena Hist. Nat., vol. 33, p. 523, fig. 2, 1929.

SPECIMENS EXAMINED: BOLIVIA: Blanca Flor, July–August 1921 (1 ♂, 2♀♀), January 1922 (2 ♂♂, 1♀), Mann. PERÚ: Pucallpa, Jan. 11, 1948 (1 ♂, 2♀♀), Schunke.

REMARKS: This species was previously known from Brazil and British Guiana.

### Genus *Anurogryllus* Saussure, 1877

#### *Anurogryllus muticus* (De Geer)

*Gryllus muticus* De Geer, Mémoires pour servir à l'histoire des insectes, vol. 3, p. 520, pl. 43, fig. 2, 1773.

SPECIMENS EXAMINED: BOLIVIA: Cañamina, July 1921 (1 ♂), Mann; Espia (1 ♂), Mann; Ivón (1♀), Mann; Rosario, Oct. 28–Nov. 9, 1921 (1♀), Mann; Rurrenabaque, October 1921 (1♀), Mann. PERÚ: Chanchamayo, June 3, 1948 (1 ♂), May 6, 1948 (1♀), Schunke; La Merced, Jan. 31, 1949 (1 ♂), Schunke; Pucallpa, Mar. 2, 1948



(1♀), Mar. 15, 1948 (1♂), Apr. 11, 1948 (1♀), Schunke; Tingo María, November 1949 (1♂, 1♀), December 1949 (7♂♂, 1♀), January 1950 (2♂♂, 1♀, 1 nymph), Allard.

REMARKS: The length of the organs of flight is very variable in this species. Nine of the females are perfectly macropterous, whereas one has no wings and very short elytra. None of the males shows the macropterous condition.

### Genus *Acheta* Linné, 1758

#### *Acheta assimilis* (Fabricius)

*Gryllus assimilis* Fabricius, Systema entomologiae, p. 280, 1775.

SPECIMENS EXAMINED: BOLIVIA: Cañamina (1♂, 1♀). BRAZIL: Fortaleza, September 1943 (1♀), MacCreary. CHILE: Puerto Oscuro, Sept. 26, 1947 (1♂), Guzman; Cerrillos de Tamaya, Sept. 16, 1947 (1♀), Guzman. PERÚ: Chanchamayo, June 21, 1948 (1♂, 1♀), Schunke; Pucallpa, Sept. 10, 1947 (3♂♂, 2♀♀), Schunke; Tingo María, December 1949 (1♀), Allard.

#### *Acheta peruviansis* (Saussure)

*Gryllus peruviansis* Saussure, Mission scientifique au Mexique . . . Recherches zoologiques, pt. 6, section 1 (Orthoptères), p. 406, 1874.

SPECIMENS EXAMINED: PERÚ: Huancayo, Mar. 4–11, 1943 (2♀♀), Jacoslav Soukup.

#### *Acheta fulvastra*, new species

FIGURE 3,a

TYPES: Holotype: Male, Lower Madidi River, Bolivia, January 1921, Mann (USNM 62061). Allotype: Rosario, Lake Rogagua, Bolivia, Oct. 28–Nov. 9, 1921, Mann (♀) (USNM). Paratypes: Covendo, Bolivia (1♂), Mann; Rosario, Lake Rogagua, Bolivia, Oct. 28–Nov. 9, 1921, Mann (1♂, 1♀); Rurrenabaque, Bolivia, Mann (1♂); Pucallpa, Río Ucayali, Perú, Mar. 6, 1948, Schunke (1♂) (USNM; MNHN).

DESCRIPTION: Medium size; coloration rather uniformly rufo-testaceous. Head as wide as pronotum, entirely of a light rufous brown; frontal rostrum sloping, as wide as 1st antennal joint. Face scarcely longer than wide; clypeofrontal suture almost straight. Antennae rufous. Palpi light yellow; 4th joint shorter than 3d, 5th large, feebly enlarged at apex, with slightly concave superior margin, apex somewhat obliquely truncated.

Pronotum with parallel margins, anterior margin very feebly concave,  $1\frac{1}{2}$  times as wide as long; disk rather strongly convex, covered with a very fine pubescence; lateral lobes a little darker than the disk, with straight inferior margin. Abdomen light yellowish brown, pubescent; epiproct relatively very long. Genitalia very long and narrow (fig. 3,a).

Legs yellowish, pubescent. Anterior tibiae a little compressed, enlarged at apex, presenting a large, oval, external typanum and a very small, round internal one; apex armed with three rather strong apical spurs which are very close together; metatarsi compressed, as long as the other two joints united. Medium tibiae armed with four apical spurs. Posterior femora rather short and thick; tibiae a little shorter than the femora, armed with long and strong spines, six on the external, five on the internal margin; the two large apical spurs equal in length; metatarsi with seven to eight denticles on each superior margin.

MALE: Elytra smoky, extending to the apex of the 5th abdominal tergite; mirror feebly wider than long, much rounded backwards, with almost right anterior angle, dividing vein in the middle, curved (this vein is variable in the different specimens of the species); two oblique veins; anal field short, with three veins and regular, long areolae; lateral field high, pellucid in the inferior part, with five regularly spaced veins and the *Sc* bearing one branch. Wings very short.

FEMALE (macropterous form): Elytra longer than those of the male, rounded at apex; dorsal field with very regular, feebly oblique veins; *Cu* bearing three branches, followed by five veins; lateral field as in the male; *Sc* plain or furcate at apex. Wings decidedly caudate. Ovipositor straight, with apical valves perfectly limited by a stranguation of the stem, lanceolate with straight margins, flat above.

DIMENSIONS (in millimeters): Length of body, ♂ 14.0, ♀ 15.0, pronotum, ♂ 2.9, ♀ 3.0; posterior femur, ♂ 9.5, ♀ 10.0; elytra, ♂ 6.5, ♀ 8.2; ovipositor, 8.5; wings of female extending beyond elytra by 11 mm.

### Genus *Miogryllus* Saussure, 1877

#### *Miogryllus convolutus* (Johansson)

*Gryllus convolutus* Johansson, in Linné, *Amoenitates academicae*, vol. 6, p. 399, 1763.

SPECIMENS EXAMINED: BOLIVIA: Blanca Flor, January 1922 (1♂), Mann. PERÚ: Pucallpa, Sept. 16, 1947 (2♀♀), Oct. 8, 1947 (4♀♀), Oct. 13, 1947 (1♀), Jan. 10, 1948 (1♀), Mar. 3, 1948 (1♂, 1♀), Schunke; Tingo María, November 1949 (1♀), December 1949 (1♂, 1♀), January 1950 (1♀), Feb. 24, 1950 (1 nymph), Feb. 26, 1950 (1♂), Allard.

REMARKS: The specimens from Tingo María and one male from Pucallpa are micropterous; the remainder are macropterous.

#### *Miogryllus verticalis* (Serville)

*Gryllus verticalis* Serville, *Histoire naturelle des insectes orthoptères*, p. 343, 1839.

SPECIMENS EXAMINED: PERÚ: Chanchamayo, May 29, 1948 (1♂), Schunke.

***Miogryllus brevipennis* Saussure**

*Grylloides brevipennis* Saussure, Mission scientifique au Mexique . . . Recherches zoologiques, pt. 6, section 1 (Orthoptères), p. 418, 1874.

SPECIMENS EXAMINED: BOLIVIA: Rurrenabaque, October 1921 (1♀), Mann.

**Genus *Hemigryllus* Saussure, 1877*****Hemigryllus ortonii* (Scudder)**

*Nemobius ortonii* Scudder, Proc. Boston Soc. Nat. Hist., vol. 12, p. 330, 1869.

SPECIMENS EXAMINED: BOLIVIA: Blanca Flor, January 1922 (3♂♂); Espia (1♂, 1♀); Mapiri, September 1921 (6♂♂); Rurrenabaque, December 1921 (2♂♂, 3♀♀), all collected by Mann.

**Genus *Argizala* Walker, 1869*****Argizala brasiliensis* Walker**

*Argizala brasiliensis* Walker, Catalogue of the . . . Dermaptera Saltatoria . . . in the British Museum, vol. 1, p. 61, 1869.

SPECIMENS EXAMINED: BOLIVIA: Ivón, February 1922 (1♂); Rosario, Oct. 18–Nov. 9, 1921 (1♂), Mann. PERÚ: Pucallpa, Jan. 10, 1948 (2♂♂, 1♀), Mar. 3, 1948 (2♂♂, 1♀), Mar. 9, 1948 (1♂), Schunke.

***Argizala hebardi* (Rehn)**

*Nemobius (Argizala) hebardi* Rehn, Proc. Acad. Nat. Sci. Philadelphia, vol. 67, p. 290, 1915.

*Nemobius argentinus* Bruner, Ann. Carnegie Mus., vol. 10, p. 371, 1916.

SPECIMENS EXAMINED: BOLIVIA: Rosario, Oct. 28–Nov. 9 1921, (25♂♂, 21♀♀), Mann.

**Genus *Pteronemobius* Jacobson and Bianchi, 1904**

The genus *Pteronemobius* differs from *Nemobius* Serville in the number of spines of the posterior tibiae, which in *Nemobius* is always three on each margin in both sexes; the first internal spine is never specialized in the male as it is in *Pteronemobius*. The macropterous condition is not known in the species of *Nemobius* and no species of the genus has yet been found in America.

***Pteronemobius cubensis* (Saussure)**

FIGURE 3,c

*Nemobius cubensis* Saussure, Mission scientifique au Mexique . . . Recherches zoologiques, pt. 6, section 1 (Orthoptères), p. 384, pl. 7, fig. 5, 1874.

SPECIMENS EXAMINED: BOLIVIA: Rosario, Oct. 28–Nov. 9, 1921 (6♂♂, 3♀♀), Mann.

*Pteronemobius longipennis* Saussure

*Nemobius longipennis* Saussure, Mission scientifique au Mexique . . . Recherches zoologiques, pt. 6, section 1 (Orthoptères), p. 383, 1874.

*Nemobius argentinus* Chopard, Ann. Soc. Ent. France, p. 559, figs. 87-89, 1918 (not *argentinus* Bruner 1916).

SPECIMENS EXAMINED: BOLIVIA: Rosario, Oct. 28-Nov. 9, 1921 (6 ♂♂, 7♀), Mann; Rurrenabaque, November 1921 (1♀), Mann (micropterous). PERÚ: Pucallpa, Oct. 8, 1947 (2 ♂♂), Jan. 10, 1948 (3 ♂♂), Mar. 2, 1948 (1♀), Schunke (macropterous).

REMARKS: According to Saussure's description, this species should have the last joint of maxillary palpi not longer than the preceding; I have never seen an American nemobiid presenting exactly this character, but the maxillary palpi are somewhat shorter in the present species than in the neighboring forms.

*Pteronemobius schunkei*, new species

HOLOTYPE: Male; Divisoria, elevation 1,600 meters, about 80 miles southwest of Pucallpa, Río Ucayali, Perú, November 1947, Schunke (USNM 62062).

MALE: Rather small and short. Head short, rounded, a little wider than the pronotum; vertex weakly sloping; coloration rufous brown above, rather strongly darkened towards the apex of the rostrum; frontal rostrum a little wider than 1st antennal joint, rounded. Face as long as wide, very dark brown. Eyes rounded, projecting; ocelli very small, the anterior one a little before the extremity of the rostrum. Antennae and palpi brown; 4th joint of maxillary palpi very short, 5th almost four times as long, rather feebly enlarged at top.

Pronotum transverse, very feebly narrowing in front, with straight anterior and posterior margins; disk feebly convex, brownish with a lateral light band; lateral lobes blackish brown, with straight inferior margin. Abdomen dark brown.

Legs rather short, pubescent, rufous with a few brown spots; anterior and medium tarsi almost as long as the tibiae. Posterior femora short and thick, striated with brown on the external face; tibiae armed on each margin with four slender spines feebly curved at apex; internal spines much longer than the external, chiefly the 4th which is longer than the larger spur; 1st spine very small, feebly tuberculiform; inferior spurs feebly unequal in length; metatarsi very long.

Elytra brown, shining, extending almost to the apex of abdomen; mirror very small, almost apical, obliquely transverse, with right anterior angle; apical part divided into two cells, one large and one very small; diagonal vein long, feebly curved at base, straight after;

chord straight; lateral field almost black with four parallel veins. No wings.

Length of body 7.0 mm.; posterior femur 5.0 mm.; elytra 4.0 mm.; pronotum 1.5 mm., width of pronotum 2.4 mm.

REMARKS: This species has the same size and general habitus as *P. cubensis* but the elytral mirror and genitalia are strongly different (fig. 3,b,c).

### Genus *Hygronemobius* Hebard, 1915

#### *Hygronemobius albipalpus* (Saussure)

*Nemobius albipalpus* Saussure, Mém. Soc. Phys. Hist. Nat. Genève, vol. 25, p. 89, 1877.

SPECIMENS EXAMINED: PERÚ: Pucallpa, Oct. 8, 1947 (1♂, 5♀♀), Oct. 13, 1947 (1♀), Jan. 10, 1948 (1♀), Mar. 2, 1948 (1♀), Schunke.

#### *Hygronemobius longespinosus*, new species

##### FIGURE 1,a

HOLOTYPE: Female: Rurrenabague, Río Beni, Bolivia, November 1921, Mann (USNM 62063).

FEMALE: Small; testaceous, a little mottled with brown. Head rounded, presenting above two very feeble brown bands; four rows of long bristles extending to the apex of the vertex. Face yellowish with two rounded brown spots near the internal margin of the antennal sockets. Antennae and palpi yellowish; 5th joint of maxillary palpi in the shape of a long triangle, feebly enlarged at apex.

Pronotum feebly narrowing in front, with posterior margin convex; disk yellowish varied with large brown spots, bearing long bristles; lateral lobes with weakly sinuated inferior margin, rounded angles; their color is dark brown with a few small yellow spots, inferior margin lined with yellowish. Abdomen varied with yellowish and brownish. Ovipositor rather short, very weakly curved, with apical valves occupying more than half the total length, very acute at apex, their margins smooth, the inferior ones very narrow.

Anterior legs wanting. Median femora yellowish with two small transverse bands, apex also brownish; tibiae with two brownish rings; metatarsi as long as the two other joints united. Posterior femora yellowish with oblique brown stripes on the external face, superior margin entirely brownish, small rings of the same color a little before the apex; internal face presenting in superior part only three brownish bands; tibiae adorned with two light brown rings near the base and small spots at base of each spine; these are very long, pubescent, brown with yellow base and apex, and there are three on each margin;



externomedian apical spur equaling half the length of the metatarsus; superointernal apical spur extending to the apex of the metatarsus.

The right elytron is wanting; left elytron presenting only three straight, equidistant veins, without transverse veinlets. Wings very long.

Length of body 5.0 mm.; length with wings 10.5 mm.; posterior femur 4.2 mm.; ovipositor 2.4 mm.; elytra 2.6 mm.

REMARKS: This species is very close to the preceding; it is of a more uniform coloration, with concolorous last joint of maxillary palpi, which is also longer and less strongly enlarged at apex; spines and spurs of the posterior tibiae much longer.

## Family MOGOPLISTIDAE

### Key to the American genera

1. Posterior metatarsus very long, almost unarmed above.

*Cycloptiloides* Sjöstedt

Posterior metatarsus armed with spinules on the superior margins . . . . . 2

2. Anterior tibiae without tympana . . . . . 3

Anterior tibiae provided with an auditory tympanum on the internal face . . . 4

3. Apical spurs of the posterior tibiae very long . . . . . *Microgryllus* Philippi

Apical spurs of the posterior tibiae short. *Oligacanthopus* Rehn and Hebard

4. Elytra of the male completely hidden under the pronotum.

*Ectatoderus* Guerin

Elytra of the male partly visible . . . . . 5

5. Pronotum of male clongate, rounded behind; elytra with periphery only visible beyond pronotum . . . . . *Cycloptilum* Scudder

Pronotum of male almost truncated behind; tegmina almost completely visible . . . . . *Ornebius* Guerin

## Family PENTACENTRIDAE

### Key to the American genera

1. Posterior metatarsi very long, cylindrical, unarmed above . . . . . 2

Posterior metatarsi compressed, denticulated above . . . . . 3

2. Eyes well developed; ocelli present; anterior tibiae perforated; elytral venation normal . . . . . *Trigonidomimus* Caudell

Eyes degenerated; no ocelli; anterior tibiae without tympana; elytra corneous, without distinguishable mirror . . . . . *Tohila* Hubbell

3. Elytra of the male feebly differentiated, showing the anal vein and one oblique vein; posterior tibiae with four or five spines on each margin, six apical spurs; posterior metatarsi twice as long as the other joints united.

*Aphemogryllus* Rehn

Elytra similar in both sexes, with longitudinal, parallel veins; posterior femora short without filiform apical part; posterior tibiae armed with three spines on each margin and five apical spurs; matatarsi not so long, dilated in the male . . . . . *Nemobiopsis* Bolivar

**Genus *Trigonidomimus* Caudell, 1912*****Trigonidomimus ruficeps*, new species**

**TYPES:** Holotype, female; Covendo, Bolivia, August 1921, Mann (USNM 62064). Allotype: Pucallpa, Río Ucuyali, Perú, Nov. 2, 1947, Schunke (♂) (USNM). Paratype: Pucallpa, Río Ucuyali, Perú, Mar. 15, 1948, Schunke (♀) (USNM).

**FEMALE:** Size a little larger than the other species of the genus. Head entirely reddish, smooth; vertex sloping, ending between the antennae in a very short and narrow rostrum. Face rufous yellow, smooth. Eyes large, dorsoventrally lengthened; ocelli scarcely visible. Labial palpi brown; maxillary palpi wanting. Antennae (a short part remains) brown with very large, flattened first joint.

Pronotum very dark brown, shining, almost glabrous; with straight anterior and posterior margins, both bordered with long bristles; disk feebly convex with a faint median furrow; lateral lobes concolorous, their inferior margin straight, anterior angle right, feebly rounded. Abdomen blackish brown. Cerci yellowish. Ovipositor rather short, very feebly curved upwards; apical valves extremely narrow and acute.

Legs long and slender. Anterior femora yellowish at base and above, with internal face brown, external face brown at apex, the brown spot narrowing towards the base; tibiae brown with a rather small, nearly round tympanum at base of the internal face; apex armed with two small and slender spurs; tarsus almost as long as the tibia, the metatarsus longer than the other two joints united. Median legs similar to the anterior ones. Posterior femora moderately swollen at base, without filiform apical part, adorned externally with three longitudinal brown bands, uniting after the middle; tibiae brown, armed with three spines on each margin and six slender apical spurs; medio-external spur a little longer than the superior one, which is very thin; superointernal spur much longer than the median. Metatarsi very long.

Elytra extending almost to the apex of abdomen, dark brown; dorsal field with five feebly oblique, parallel veins, the two internal ones uniting towards the middle; lateral field high, blackish brown, with three distant, feebly incurved at base veins. Wings no longer than the elytra.

**MALE (allotype):** General aspect and color of the female. Head as in the female; palpi blackish; 5th joint of the maxillary palpi very large, feebly widening at apex, with slightly concave superior margin, apex lengthily truncated, feebly rounded, internal margin very short. Legs as in the female but somewhat more blackish. Elytra blackish, extending only to the apex of the 6th abdominal tergite; mirror large,

narrow, almost twice as long as wide, with very acute anterior margin, rounded backwards, divided beneath the middle by an oblique, somewhat curved vein; diagonal vein as long as the internal margin of the mirror; chords much longer, feebly curved, very close one to the other; apical field very short; *Sc* bearing two branches. Wings exceeding very much the elytra, whitish.

**DIMENSIONS** (in millimeters): Length of body, ♀ 9.0, ♂ 7.5; length with wings, ♂ 13; pronotum, 2.0; posterior femur, ♀ 7.0, ♂ 5.0; elytra, ♀ 6.0, ♂ 2.0; ovipositor, 5.5.

*Trigonidomimus zernyi* (Chopard)

*Quarequa zernyi* Chopard, Ann. Naturh. Mus. Wien, vol. 46, p. 246, fig. 9, 1933.

**SPECIMENS EXAMINED:** PERÚ: Tingo María, November 1949 (1♀), Allard.

**Family PHALANGOPSIDAE**

**Key to the American genera**

1. Pronotum wider than long, with lateral lobes square or rounded, not attenuated in front . . . . . 2  
     Pronotum long, with lateral lobes narrowing in front, their inferior margin ascending forwards . . . . . **Cophus** Saussure
2. Frontal rostrum between the antennae wide; inferior margin of the lateral lobes of pronotum straight; last joint of maxillary palpi obliquely truncated at apex; legs short (*Luzarae* group) . . . . . 3  
     Frontal rostrum between the antennae narrow; inferior margin of the lateral lobes of pronotum ascending backwards . . . . . 21
3. Elytra well developed, their structure delicate; venation conspicuous, dorsal field of male deplanate . . . . . 4  
     Elytra moderately to greatly reduced or absent; when present, with structure chitinous, often corneous; venation of dorsal field weak or obsolete . . 7
4. Lateral field of male tegmina specialized; *Sc* with numerous branches . . 5  
     Lateral field of male tegmina with simple venation; *Sc* without oblique branches . . . . . **Prosthacusta** Saussure
5. Anterior tibiae with foramina on both faces; male tegmina ample, widening behind . . . . . 6  
     Anterior tibiae with foramen on internal face only; male tegmina not widening caudad . . . . . **Lernecella** Hebard
6. Superointernal apical spur of posterior tibiae longer than the median; tibiae armed with four spines on each margin; mirror of male elytra triangular; apical field provided with longitudinal veins . . . . . **Lerneca** Walker  
     Superointernal apical spur of posterior tibiae shorter than the median; tibiae armed with three spines on the external margin, one on the internal, with very strong denticles before the spines; mirror of male elytra almost oval; apical field with transverse veins . . . . . **Benoistiella** Uvarov
7. Anterior tibiae with auditory foramina on one or both faces . . . . . 8  
     Anterior tibiae without auditory foramina . . . . . 18
8. Tegmina with lateral field having two unbranched longitudinal veins . . 9  
     Tegmina with lateral field having more than two longitudinal veins (some of which branch in the males) . . . . . 12

9. Anterior tibiae with auditory foramen on internal face only . . . . . 10  
Anterior tibiae with foramina on both faces . . . . . *Tairona* Hebard
10. Male tegmina overlapping in such a way that the dextral dorsal field almost wholly covers the sinistral; venation there obsolete but a distinct depression showing the archet; entire dorsal surface strongly hirsute, elytra not at all glabrous . . . . . *Gryllosoma* Hebard  
Male tegmina with dextral dorsal field covering only slightly more than half the sinistral; dorsal exposed field with venation obsolete, smooth, convex, without lateral angle; dorsal surface more or less polished, weakly or not at all hirsute . . . . . 11
11. Form more robust; palpi elongate. Female tegmina slightly overlapping . . . . . *Rehniella* Hebard  
Form less robust; size small; palpi very elongate. Female tegmina represented by small lateral pads . . . . . *Prosthama* Hebard
12. Anterior tibiae with auditory foramen on internal face only . . . . . 13  
Anterior tibiae with auditory foramina on both faces . . . . . 15
13. Palpi simple. Male tegmina with entire shining dorsal surface weakly convex . . . . . 14  
Palpi with 4th and 5th joints expanded and flattened. Male tegmina entire dorsal surface flat . . . . . *Palpiger* Hebard
14. Palpi moderately elongate. Male tegmina without trace of venation. *Niquirina* Hebard  
Palpi elongate. Male tegmina with impressed archet and mere traces of other venation . . . . . *Amusina* Hebard
15. Impressions of pronotal disk feeble, inconspicuous. Antennae annulate . 16  
Impressions of pronotal disk distinct. Antennae and limbs not annulate. Size very large . . . . . *Megalamus* Hebard
16. Form more robust with shorter limbs . . . . . 17  
Form slender with very elongate limbs for the group . . . *Amusodes* Hebard
17. Tegmina with venation reduced, delicate but distinct . . . *Luzarida* Hebard  
Tegmina with venation greatly reduced, almost obliterated . . *Luzara* Walker
18. Eyes not strongly projecting; palpi not annulate; limbs short . . . . . 19  
Eyes more strongly projecting; palpi annulate; limbs of medium length. *Anacusta* Hebard
19. Lateral lobes of pronotum diverging backwards so that the posterior angle is distinctly visible from above. Both sexes with short elytra . . . 20  
Lateral lobes of pronotum nearly perpendicular. Female apterous. *Miogrylloides* Hebard
20. Limbs very short. Projection formed by fastigium and face moderately developed. Dorsal surface of body moderately hirsute . . *Cophella* Hebard  
Limbs short. Projection weak and very broadly rounded. Dorsal surface of body shining, hairs exceedingly minute . . . *Paracophella* Hebard
21. Last joint of maxillary palpi truncated at apex only. Legs relatively short (*Heterogrylli* group) . . . . . 22  
Last joint of maxillary palpi strongly and obliquely truncated at apex (*Amphiacustae* group) . . . . . 32
22. Frontal rostrum as wide as first antennal joint . . . . . 23  
Frontal rostrum very narrow . . . . . 24
23. Maxillary palpi short; very small for the group (10 mm.). *Engryllina* Hebard  
Maxillary palpi long; size larger (15-16 mm.) . . *Dyscophogryllus* Rehn
24. Anterior tibiae nonperforated or with scarcely visible auditory tympana . 25  
Anterior tibiae with auditory tympana on one or both faces . . . . . 28



25. Both sexes completely apterous . . . . . **Arachnopsis** Saussure  
Males with greatly reduced elytra, without perceptible veins; female apterous . . . . . 26
26. Legs and palpi short . . . . . **Laranda** Walker  
Legs and palpi very long, posterior femora with filiform apical part . . . . . 27
27. Legs moderately elongate; elytra of male triangular, thick, feebly distant on the median line . . . . . **Eidmanacris**, new name<sup>3</sup>  
Legs extremely long; elytra of male thin, overlapping, truncated at apex.  
**Phalangopsis** Serville
28. Anterior tibiae perforated on both faces . . . . . **Paragryllus** Guérin  
Anterior tibiae perforated on one face only . . . . . 29
29. Anterior tibiae perforated on the internal face . . . . . 30  
Anterior tibiae perforated on the external face . . . . . **Ectecous** Saussure
30. Elytra of male short, triangular, without well defined mirror; those of the female reduced to lobiform, lateral pads . . . . . **Uvaroviella** Chopard  
Elytra of the male with well defined mirror . . . . . 31
31. Mirror oval, divided by numerous veins; female apterous . . . . . **Acla** Hebard<sup>4</sup>  
Mirror vaguely triangular, divided near the apex by one or two irregular veins; elytra present in the female . . . . . **Aclodes** Hebard
32. Elytra of male very short, truncated, or absent . . . . . **Paracophus** Chopard  
Elytra of male moderately short with normal venation . . . . . 33
33. Superior apical spur of posterior tibiae longer than the median on both sides; anterior tibiae perforated on the internal face . . . . . **Endecous** Saussure  
Superior apical spur of posterior tibiae shorter than the median . . . . . 34
34. Anterior tibiae perforated on both faces; elytra of male rather short, rounded; mirror with two dividing veins . . . . . **Amphiacusta** Saussure  
Anterior tibiae perforated on the external face only; elytra of male coriaceous; mirror divided by several veins . . . . . **Hemicophus** Saussure

### Genus *Prosthacusta* Saussure, 1874

#### *Prosthacusta amplipennis*, new species

FIGURES 1,c, 3,d

**HOLOTYPE:** Male; Pucallpa, Río Ucuyali, Perú, Sept. 16, 1947, Schunke (USNM 62065).

**MALE:** Close to *P. circumcincta* Saussure; coloration rather uniform light brown. Head rather small, as wide as pronotum, uniformly brownish, almost glabrous; vertex strongly sloping; frontal rostrum as wide as first antennal joint. Face long, yellowish, smooth. Antennae and palpi yellowish; maxillary palpi rather long, the three last joints equal in length, the last one feebly enlarged, obliquely truncated at apex.

Pronotum as long as wide, with straight anterior and posterior margins; disk strongly convex, brown, smooth, glabrous; lateral lobes long, with inferior margin straight, rounded angles. Abdomen dark brown above, yellowish beneath; subgenital plate long, truncated at apex; epiproct almost twice as wide as long, feebly truncated at apex,

<sup>3</sup> For *Eidmaniella* Chopard (Aug. 1938), preoccupied by *Eidmaniella* Keler (March 1938).

<sup>4</sup> It seems that this genus may represent the male sex of *Heterogryllus* Saussure; in that case, the last name would have priority.



furrowed at base. Genitalia triangular in their general shape, with four narrow apical processes (fig. 3,d).

Anterior and median legs rather long and slender; femora somewhat darkened at apex; tibiae vaguely annulated, the anterior ones presenting a small auditory foramen near the base of the internal face. Posterior femora rather short, strongly dilated at base, without apical filiform part, with darkened apex; before the brown part there is a yellowish ring; internal and inferior faces mottled with brown. Tibiae brown at base, presenting little after the brown part a ring of the same color; base of the spines spotted with brown; superior margins rather strongly serrulated and armed with four spines; superoexternal and inferoexternal apical spurs very short, the median twice as long; inferointernal spur a little longer than the external; superointernal longer than the median, a little more than half the length of the metatarsus; the latter is long, brown at apex, armed above with a few denticles, the apical spurs rather short.

Elytra extending to the apex of abdomen, rather strongly widening caudad, rufous brown, shining, with a rather feeble yellow, opaque, band all round; internal margin feebly convex; internal angle and apical margin strongly rounded; dorsal field somewhat corneous with rather feeble veins; diagonal vein very short, divided, forming a very long, triangular mirror; two chords, the internal of which extending along the apical margin as far as the external angle; six long, parallel, straight oblique veins; anal vein very faint; anal field especially thickened; lateral field rather small, with three plain veins, the third one emerging from base of the *Sc*. No wings.

Length of body 11.5 mm.; pronotum 2.4 mm.; width of pronotum 2.5 mm.; posterior femur 9 mm.; elytra 7.5 mm.

REMARKS: This species differs from *circumcincta* in the more uniform coloration and the wider elytra with quite different venation.

### Genus *Miogryllodes* Hebard, 1928

#### *Miogryllodes* sp.

SPECIMENS EXAMINED: BRAZIL: Near Pará (1♀ nymph), Merrill. Certainly belonging to this genus, but specifically undeterminable.

### Genus *Luzara* Walker, 1869

#### *Luzara rufipennis* Walker

*Luzara rufipennis* Walker, Catalogue of the . . . Dermaptera Saltatoria . . . in the British Museum, vol. 1, p. 103, 1869.

SPECIMENS EXAMINED: BOLIVIA: Tumupasa, December 1921 (1♀), Mann. PERÚ: Chanchamayo, July 22, 1948 (1♂), Schunke; Río Ucuyali, Apr. 30, 1947 (1♂), Schunke.

**Genus *Luzarida* Hebard, 1923*****Luzarida pulla* Hebard**

*Luzarida pulla* Hebard, Trans. Amer. Ent. Soc., vol. 54, p. 41, pl. 8, fig. 1, 1928.

SPECIMENS EXAMINED: BOLIVIA: Tumupasa, December 1921 (1♀), Mann.

**Genus *Paragryllus* Guerin, 1844*****Paragryllus temulentus* Saussure**

*Paragryllus temulentus* Saussure, Mem. Soc. Phys. Hist. Nat. Genève, vol. 25, p. 413, 1878.

SPECIMENS EXAMINED: BOLIVIA: Cachuela Esperanza, March 1922 (1♀), Mann; Tumupasa, December 1921 (1♀), Mann.

**Genus *Acla* Hebard, 1923*****Acla reticulata*, new species****FIGURE 3,*e***

HOLOTYPE: Female; Fundo Sinchono, elevation 1,550 meters, about 40 miles southwest of Pucallpa, Río Ucuyali, Perú, Sept. 2, 1947, Schunke (USNM 62066).

MALE: Size small. Head as wide as pronotum; occiput and vertex short, strongly convex, rufous adorned with four brown bands, finely pubescent; frontal rostrum very narrow, brown. Face long, shining brown with a median yellow band. Eyes strongly projecting forwards; ocelli small, the anterior one at extremity of the rostrum, the lateral ones very distant from it, quite at base. Antennae wanting. Palpi rather long, brownish; 3d and 4th joints of the maxillary palpi equal in length, 5th longer, feebly enlarged, truncated at apex only.

Pronotum transverse, pubescent, with straight anterior and posterior margins, furrowed median line; disk feebly convex, irregular, rufous brown with brown spots; lateral lobes blackish, with inferior margin strongly ascending backwards. Abdomen brown mottled with rufous above, brownish beneath; subgenital plate of medium size, weakly narrowing at apex, with feebly truncated posterior margin. Genitalia wide, the superior part forming a narrow bridge with a median process in the shape of a trident; inferior parts depressed with a long, curved lateral process (fig. 3,*e*).

Legs long, annulated with brown. Anterior tibiae perforated with a small, oval tympanum at base of the internal face; tarsi very long. Posterior femora strongly dilated at base, adorned on the external face with two oblique brown bands and three rings—one in the middle, one in the narrow apical part, and one at apex. Tibiae with three brown rings, armed with four external, three internal spines, finely

serrulated; superoexternal and inferoexternal apical spurs very short, median twice as long; inferointernal spur very small, much shorter than the external, median and superior of the same length, scarcely reaching the middle of the metatarsus, which is very long.

Elytra extending to the apex of the 6th abdominal tergite, dark brown, finely pubescent, with yellowish veins; anal field small; archet with a much-rounded angle; mirror large but somewhat confused, subtriangular, filled with a rather regular reticulation; chords irregular, very distant, the 2d incomplete; five oblique veins, parallel to one another; apical field almost null; lateral field small, blackish, with inferior margin very oblique, presenting three regular veins. No wings.

Length of body 10.0 mm.; pronotum 2.1 mm.; width of pronotum 3.0 mm.; posterior femur 10.5 mm.; elytra 5.0 mm.

REMARKS: This species is quite distinct by the reticulation which almost fills the mirror; this character does not fit perfectly either with *Acla* or with *Aclodes* and the knowledge of other species will probably lead to the reunion of these two genera.

*Acla vicina*, new species

FIGURE 3, f

HOLOTYPE: Male; Cerro Azul, about 120 miles northwest of Pucallpa, Río Ucuyali, Perú, May 6, 1947, Schunke (USNM 62067).

MALE: Size medium; testaceous varied with brown, finely pubescent. Head short; vertex abruptly sloping; superior part adorned with four yellow lines which are united in front by three semicircular lines; another fine yellow line borders the internal face of the eye till the cheek, where it is united to the occiput by a short oblique line; frontal rostrum very narrow. Face yellow varied with brown. Eyes strongly projecting; ocelli very small, the anterior one at extremity of the rostrum, the lateral ocelli at base. Antennae brown with a few yellow rings. Palpi rather short, slender; 5th joint of the maxillary palpi feebly enlarged at apex which is straightly truncated.

Pronotum as long as wide in front, feebly widening backwards, with straight anterior and posterior margins; disk feebly convex, irregular, finely furrowed in the middle; lateral lobes with inferior margin ascending backwards, brown with anterior margin yellow. Abdomen brown; subgenital plate rather long, rounded at top. Genitalia rather short and similar to those of the preceding species (fig. 3,f).

Legs moderately long, varied with yellowish and brownish. Anterior and median tibiae thickened at base, mottled with brown; tibiae presenting three brown rings, the anterior ones nondilated at base, presenting on the internal face a small, nearly round foramen; apex of the anterior tibiae armed with two inferior spurs, the internal being the longer; median tibiae armed with three apical spurs; tarsi

long, chiefly the metatarsus which is brown with yellow base. Posterior femora rather short and thick at base, with almost null filiform apical part; external face obliquely striated with brown. Posterior tibiae presenting four brown rings, armed with four external, three internal spines which are short and placed quite in the apical part; margins strongly serrulated; external apical spurs very short, median and superior internal spurs longer, chiefly the median, which, however, does not exceed one-third the metatarsus; the latter is long, brown with yellow base, armed above with a row of five or six denticles, the apical spurs short.

Elytra extending to the apex of abdomen, rounded at apex; mirror very large, occupying more than two-thirds of the length of the elytron, divided by 13 undilated veins; diagonal vein very short; 1st chord rather long, almost straight and almost touching the mirror; 2nd chord short, strongly curved; anal field very short, the archet unbroken, simply undulated; oblique veins very close, about 12 in number (description made from the left elytron, the right one being absent), apical field very short with one vein only; lateral field dark brown, *Sc* plain.

Length 12.0 mm.; pronotum 2.8 mm.; posterior femur 11.0 mm.; elytra 7.0 mm.

REMARKS: Very close to *A. multivenosa* Chopard, from Costa Rica, but smaller with larger elytra and mirror occupying a more important place.

### Genus *Aclodes* Hebard, 1928

#### *Aclodes maculatum* (Caudell)

*Endacusta maculata* Caudell, Ins. Insc. Menstr., vol. 6, p. 66, 1918.

SPECIMENS EXAMINED: PERÚ: Pucallpa, Jan. 22, 1948 (1♂), Schunke; Tingo María, December 1949 (1♂), Allard.

### Family OECANTHIDAE

#### Key to the American genera

Posterior tibiae serrulated and armed with small spines on the superior margins.

*Oecanthus* Serville

Posterior tibiae serrulated without spines . . . . . *Neoxabea* Kirby

### Genus *Oecanthus* Serville, 1831

#### *Oecanthus peruvianus* Walker

*Oecanthus peruvianus* Walker, Catalogue of the . . . Dermaptera Saltatoria . . . in the British Museum, vol. 1, p. 95, 1869.

SPECIMENS EXAMINED: PERÚ: Chanchamayo, La Merced, Feb. 2, 1949 (1♀), Schunke.

## Family TRIGONIDIIDAE

## Key to the American genera

1. Last joint of maxillary palpi more or less dilated but of normal shape . . . 2  
    Last joint of maxillary palpi considerably expanded, foliaceous . . . . . 10
2. Elytra of male presenting a distinct mirror . . . . . 3  
    Elytral venation similar in both sexes . . . . . 7
3. Head flattened above; eyes horizontally lengthened; 5th joint of maxillary palpi very short . . . . . **Cyrtoxipha** Brunner  
    Head convex above; eyes vertically lengthened; 5th joint of maxillary palpi longer . . . . . 4
4. Form extremely slender; posterior metatarsi nearly twice as long as the other joints together . . . . . **Macroanaxipha** Hebard  
    Not so slender; posterior metatarsi shorter . . . . . 5
5. Anterior tibiae without tympana; size very small . . . . . **Falcicula** Rehn  
    Anterior tibiae with more or less distinct tympana; size larger . . . . . 6
6. Auditory tympana linear, imperforate; tegmina corneous, the veins poorly defined. Color of insect bright . . . . . **Symphyloxiphus** Rehn  
    Auditory tympana oval; tegmina membranaceous. Color of insect dull yellow or brownish to blackish . . . . . **Anaxipha** Saussure
7. Elytra covered with a fine pubescence . . . . . **Hebardinella** Chopard  
    Elytra without hairs on the dorsal surface . . . . . 8
8. Elytral veins quite straight, parallel, projecting . . . . . 9  
    Elytral veins less projecting, more or less oblique and diverging.  
    **Metioche** Stål
9. Posterior legs abnormally long . . . . . **Estrellina** Hebard  
    Legs of normal length . . . . . **Rhienogryllus** Chopard
10. Head and pronotum very elongate; coloration more or less metallic; pronotum without pubescence . . . . . **Cranistus** Stål  
    Head short; pronotum a little longer than wide . . . . . 11
11. Eyes feebly projecting; pronotum without hairy covering.  
    **Phyllopalpus** Uhler  
    Eyes more strongly projecting; pronotum with hairy covering.  
    **Phyllosecyrtus** Guerin

Genus *Cyrtoxipha* Brunner, 1873*Cyrtoxipha pernambucensis* Rehn

*Cyrtoxipha pernambucensis* Rehn, Proc. Acad. Nat. Sci. Philadelphia, vol. 72, p. 283, pl. 11, fig. 39, 1920.

SPECIMENS EXAMINED: PERÚ: Pucallpa, Jan. 29, 1948 (1♀), Feb. 1, 1948 (1♀), Schunke; Tingo María, Nov. 14, 1949 (1♀), Allard.

Genus *Anaxipha* Saussure, 1874*Anaxipha peruviana* SaussureFIGURE 3,*g*

*Cyrtoxipha peruviana* Saussure, Mission scientifique au Mexique . . . . Recherches zoologiques, pt. 6, section 1 (Orthoptères), p. 378, 1874.



SPECIMENS EXAMINED: BOLIVIA: Blanca Flor, January 1922 (1♀), Mann; Huachi, September 1921 (1♀), Mann; Mapiri, September 1921 (1♂), Mann; Tumupasa, September 1921 (1♂), Mann. PERÚ: Chanchamayo, Apr. 26, 1948 (1♀), June 3, 1948 (1♂), Schunke; Divisoria, 1947 (1♀), 1948 (1♂), Dec. 4, 1947 (1♀), Feb. 15, 1948 (1♂), Schunke; Tingo María, November 1949 (1♂), December 1949 (2♂♂, 1♀), January 1950 (3♂♂, 6♀♀), February 1950 (1♂, 1♀), Feb. 11, 1950 (1♂), Feb. 14, 1950 (1♀), Feb. 19, 1950 (1♂, 1♀).

REMARKS: Both the Bolivian and Peruvian series include macrop-  
terous as well as micropterous specimens. Several micropterous ones  
from Tingo María are intensively colored.

*Anaxipha conspersa* (Bruner)

FIGURE 3,h,p

*Cyrtoxipha conspersa* Bruner, Ann. Carnegie Mus., vol. 10, p. 406, 1916.

SPECIMENS EXAMINED: BOLIVIA: Coroico (1♂); Huachi, September 1921 (1♂), Mann; Tumupasa, December 1921 (1♀), Mann. PERÚ: Fundo Sinchona, Aug. 5, 1947 (1♀), Schunke; Pucallpa, Jan. 10, 1948 (1♂), Schunke.

*Anaxipha maxima* (Bruner)

FIGURE 3,i,n

*Cyrtoxipha maxima* Bruner, Ann. Carnegie Mus., vol. 10, p. 407, 1916.

SPECIMENS EXAMINED: BOLIVIA: Reyes (1♀), Mann; Rosario, November 1921 (1♂), Mann.

*Anaxipha ruficeps*, new species

HOLOTYPE: Male; Tingo María, Perú, Feb. 14, 1950, Allard (USNM 62068).

MALE: Slender, of a very light general coloration. Head somewhat flattened above, adorned with four wide, rufous bands, uniting in front a little before the extremity of the rostrum; this rufous tint is bordered with an opaque, yellow band. Face as long as wide, pale yellow. Eyes projecting, rounded. Antennae yellow with 1st joint blackish brown. Palpi yellow; 4th joint of maxillary palpi shorter than 3d, 5th large, triangular, rather strongly enlarged at apex.

Pronotum narrowing in front; disk yellow, adorned in the middle with a wide brown band with a fine median yellow line; lateral lobes yellow with a rufous band in the superior part, inferior margin straight, anterior margin a little rounded. Abdomen yellow; genitalia almost alike those of *peruviana*.

---

FIGURE 1.—Holotypes of: a, *Hygronemobius longespinosus*, new species, female; b, *Rhcnogryllus annulipes*, new species, male; c, *Prosthacusta amplipennis*, new species, male; d, *Diatrypa allardi*, new species, male. Drawn by Arthur D. Cushman, Entomology Research Branch, U. S. Department of Agriculture.

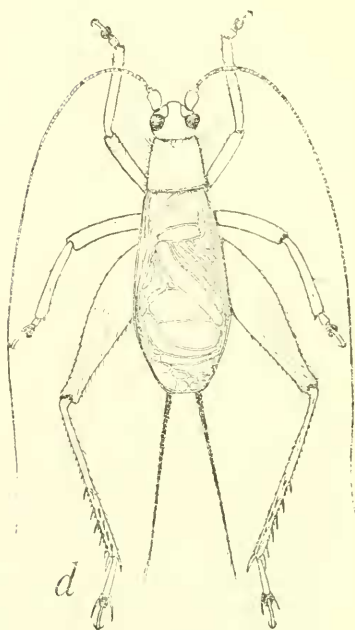
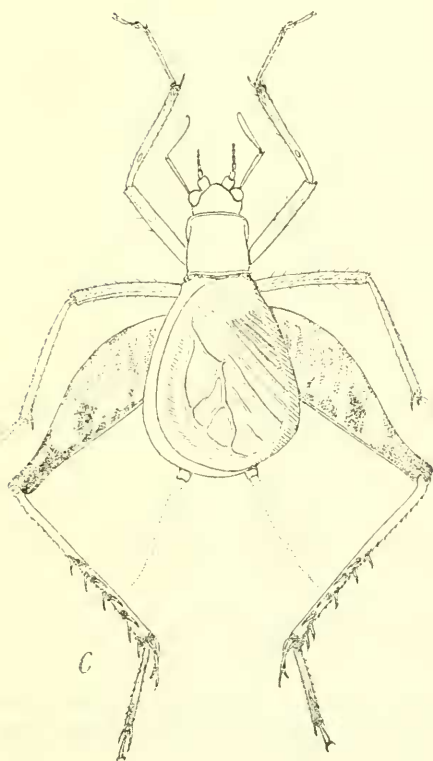
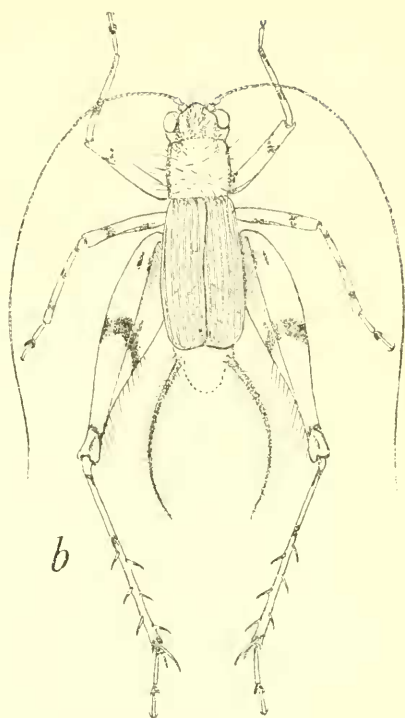
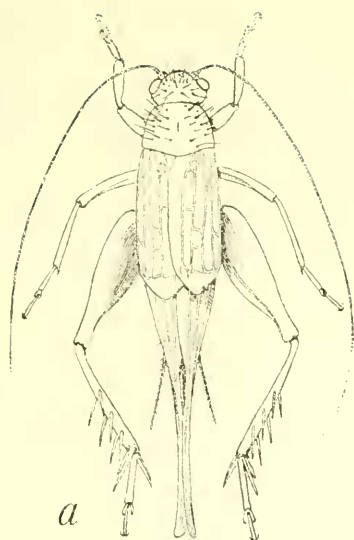


FIGURE 1.—For explanation see facing page.

Legs long and slender. Anterior tibiae rather strongly widening almost to the middle, perforated with two large, oval tympana; 2d and 3d joints of the tarsus grayish brown. Medium femora adorned with a rufous spot on each side a little before the apex. Posterior femora long and slender, yellow; spines of the tibiae long, grayish; apical spurs short, the two internal ones wide, furrowed beneath.

Elytra strongly exceeding the apex of abdomen, rather narrow; mirror large, longer than wide by a quarter; diagonal vein rather long, strongly curved at base, then very close and almost parallel to the

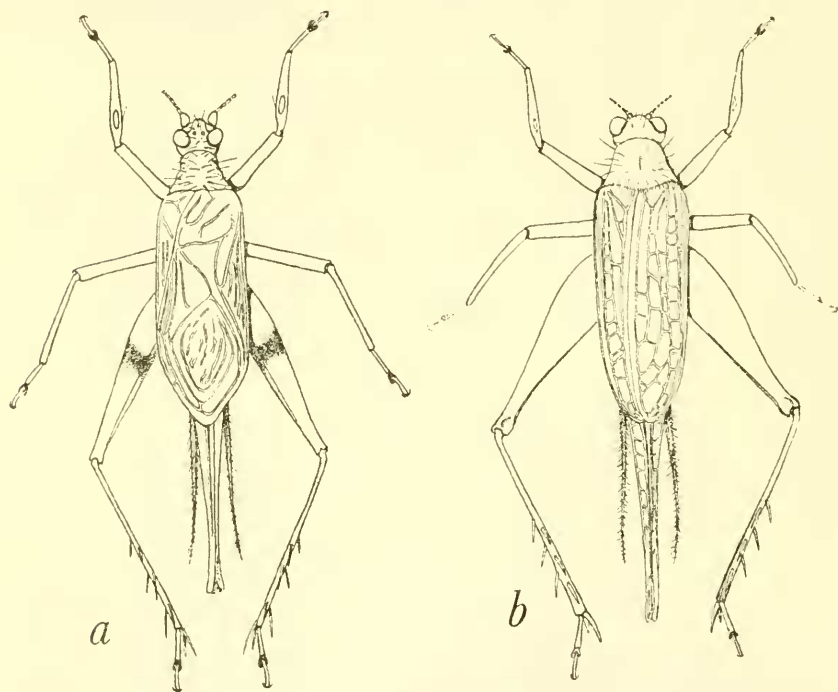


FIGURE 2.—Holotypes of: *a*, *Anaxipha nigerrima*, new species, male; *b*, *Melioche boliviana*, new species, male. Drawn by Arthur D. Cushman, Entomology Research Branch, U. S. Department of Agriculture.

oblique vein; coloration of a very pale, almost transparent yellow, with a few brown spots in the anal field, at extremity of the chords and quite at apex of the elytron; lateral field transparent with two veins. Wings long, grayish.

Length of body 6.5 mm.; length with wings 11.5 mm.; elytra 5.5 mm.; posterior femur 5.2 mm.

REMARKS: This species is remarkable by a rather narrow shape and a very pale general coloration with a well marked pattern on the head and elytra. The genitalia are almost similar to those of *A. peruviana*.

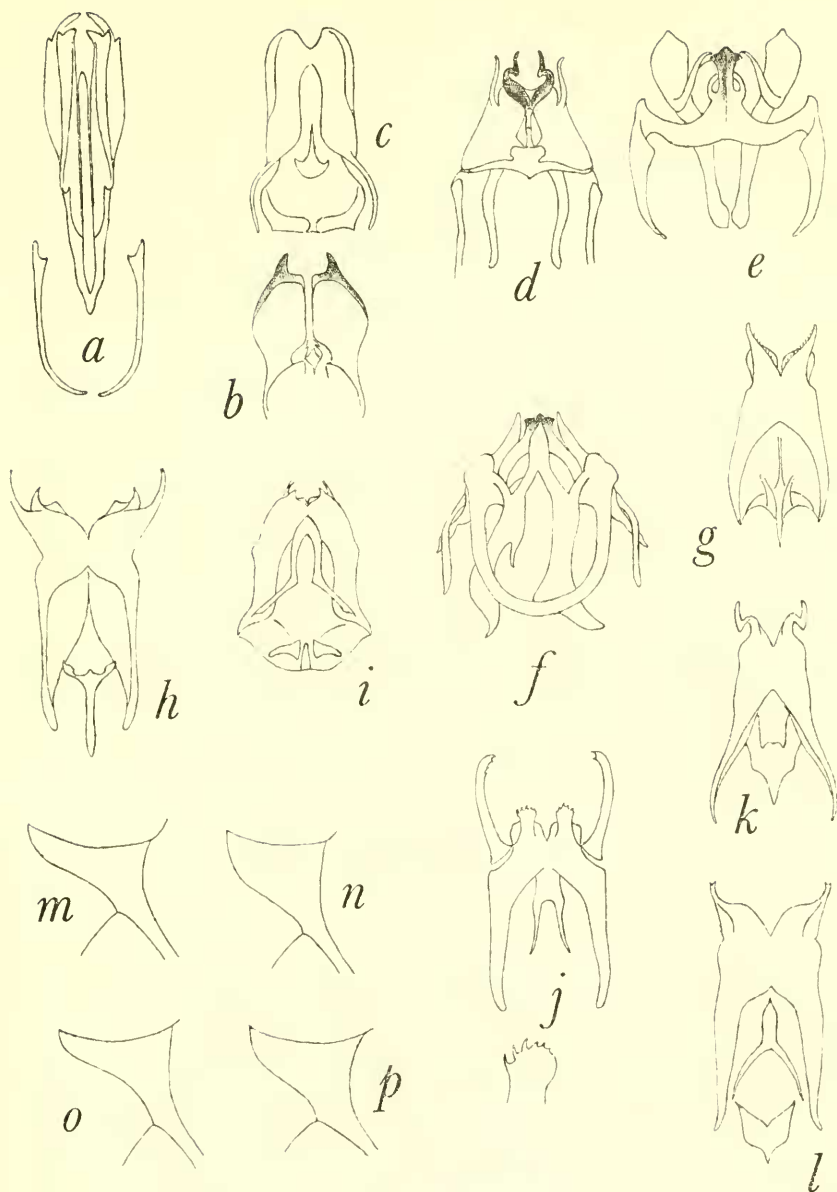


FIGURE 3.—Male genitalia (unless otherwise noted) of: *a*, *Acheta fulvastra*, new species; *b*, *Pteronemobius schunkei*, new species; *c*, *P. cubensis* Saussure; *d*, *Prosthacusta amplipennis*, new species; *e*, *Acla reticulata*, new species; *f*, *A. vicina*, new species (inferior part); *g*, *Anaxipha peruviana* Saussure; *h*, *A. conspersa* Bruner; *i*, *A. maxima* Bruner; *j*, *A. soror*, new species; *k*, *A. infirmenotata*, new species; *l*, *A. smithi* Saussure; *m-p*, oblique vein, diagonal vein, and anterior part of the mirror of: *m*, *Anaxipha soror*, new species; *n*, *A. maxima* Bruner; *o*, *A. infirmenotata*, new species; *p*, *A. conspersa* Bruner.

*Anaxipha soror*, new species

FIGURE 3,j,m

HOLOTYPE: Male; Tingo María, Perú, Feb. 11, 1950, in jungle. Allard (USNM 62029).

MALE: A large species, of the *conspersa-maxima* group; coloration uniformly dark testaceous. Head a little wider than pronotum in front, feebly flattened above. Eyes rounded. Antennae broken, the basal joints yellowish. Palpi testaceous; 4th joint of maxillary palpi shorter than 3d, 5th triangular, brown, feebly obliquely truncated at apex.

Pronotum transverse, rather strongly narrowing in front, provided with long bristles; lateral lobes yellowish with straight inferior margin, much-rounded anterior angle.

Legs relatively short, very pubescent. Anterior and median femora adorned with a brown ring before the apex; anterior tibiae moderately swollen at base perforated with two large, oval tympana. Posterior femora rather strongly dilated at base, without filiform apical part; tibiae spotted with brown at base of the spines; apical spurs strongly pubescent, the two large internal ones relatively short and thick.

Elytra extending a little farther than the abdominal extremity; mirror large ( $2.6 \times 3.2$  mm.); diagonal vein regularly bisinuated; lateral field with three veins; space between the Sc and the first vein very wide, regularly divided by vertical veinlets. Wings very long.

Length of body 6.8 mm.; length with wings 11 mm.; posterior femur 5.5 mm.; elytra 6.0 mm.

*Anaxipha infirmenotata*, new species

FIGURE 3,k,o

HOLOTYPE: Male; Tingo María, February 1950, Allard (USNM 62070),

DESCRIPTION: Very close to the preceding. Head rather strongly darkened above; 4th joint of the maxillary palpi almost equal to the 3d, 5th very large and chiefly very wide at apex, which is straightly truncated. Pronotum rather strongly narrowing in front; middle of the disk adorned with a large, brown, irregular spot; lateral lobes yellow with a few small brown spots. Anterior and median legs a little longer than in the preceding species; femora adorned with a

FIGURE 4.—Male genitalia (unless otherwise noted) of: a, *Anaxipha stolzmanni* Bolivar; b, *A. allardi*, new species, viewed from above; c, same, inferior side; d, *A. nigripennis*, new species; e, *A. nigerrima*, new species; f, *A. schunkei*, new species; g, *Metioche boliviiana*, new species; h, *M. peruviana*, new species; i, maxillary palpus of *M. peruviana*; j, maxillary palpus of *M. boliviiana*; k, *Rhynchogryllus annulipes*, new species; l, *Eneopteroides flavifrons*, new species; m, *Diatrypa pallidilabris* Chopard; n, *D. allardi*, new species; o, *D. latipennis*, new species; p, *D. schunkei*, new species.



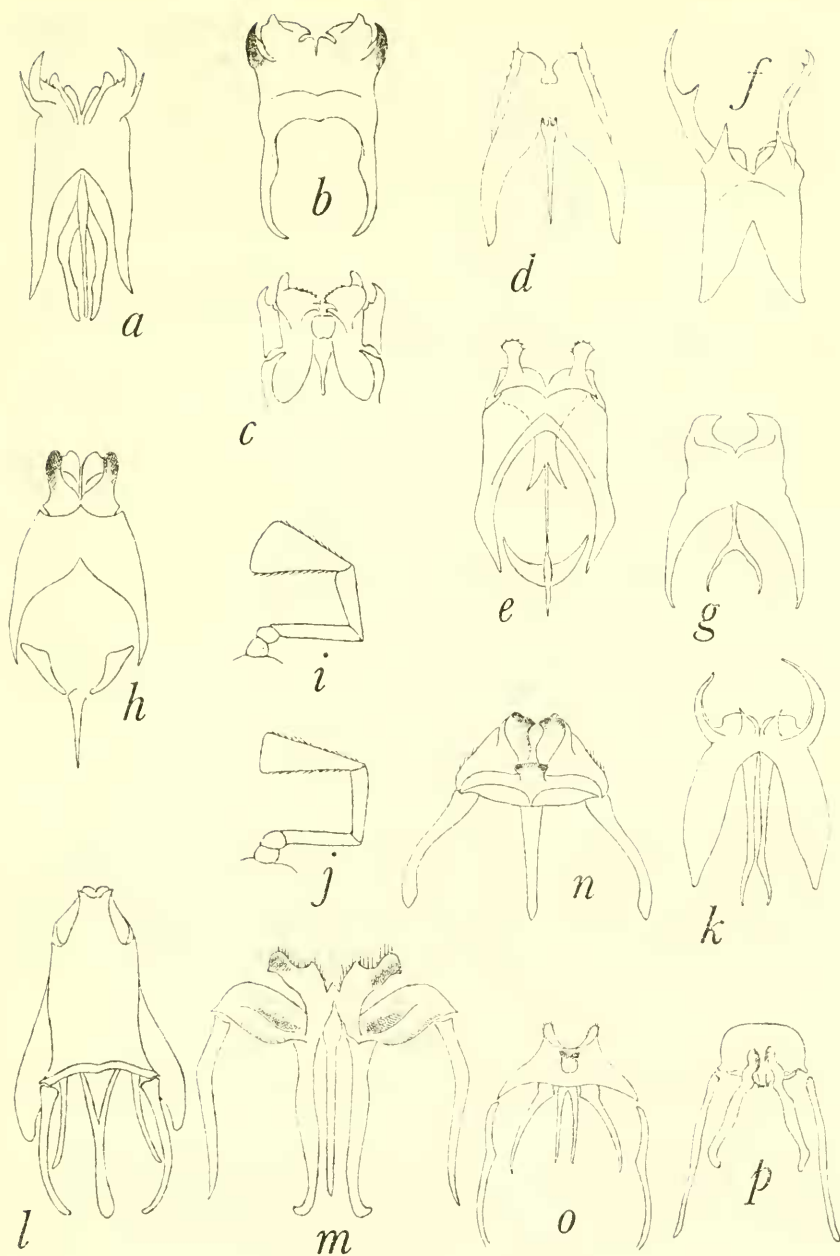


FIGURE 4.—For explanation see facing page.

brown ring a little before the apex; anterior tibiae strongly enlarged at base to the middle; auditory foramina very large, spotted with brown above. Posterior legs wanting. Elytra extending beyond the apex of abdomen; coloration of a dark amber with a few weak brown spots on the chords and at apex; mirror very large,  $1\frac{1}{4}$  times as long as wide; diagonal vein thickened and strongly curved at base, feebly convex after; the chord along the internal margin of the elytron very thick. Wings very long, brownish.

Length of body 7.5 mm.; length with wings 14.5 mm.; elytra 8.0 mm.

The five species of the group *conspersa-maxima* are close and may be distinguished by the following key:

1. Diagonal vein curved at base only, very close and almost parallel to the oblique vein . . . . . **ruficeps**  
     Diagonal vein bisinuated, not at all parallel to the oblique vein . . . . . 2
2. Mirror nearly as wide as long; diagonal vein very distant from the oblique vein; posterior femora strongly spotted with brown . . . . . **conspersa**  
     Mirror longer than wide by a quarter; diagonal vein not so distant from the oblique vein . . . . . 3
3. Last joint of maxillary palpi strongly enlarged at top . . . . . 4  
     Last joint of maxillary palpi not so wide at apex; diagonal vein quite regularly bisinuated . . . . . **soror**
4. Diagonal vein strongly curved . . . . . **maxima**  
     Diagonal vein very feebly curved . . . . . **infirmenotata**

*Anaxipha smithi* (Saussure)

FIGURE 3,l

*Cyrtoxiphus smithi* Saussure, in Godman and Salvin, *Biologia Centrali-Americana*, Orthoptera, vol. 1, p. 236, 1897.

SPECIMENS EXAMINED: BOLIVIA: Blanca Flor, January 1922 (1♂), Mann; Cachuela, March 1922 (1♂), Mann; Rurrenabaque, January 1922 (1♂), Mann. PERÚ: Pucallpa, Feb. 3, 1948 (1♀), Mar. 2, 1948 (2♂♂, 2♀♀), Schunke; Tingo María, November 1949 (1♂), Allard.

*Anaxipha stolzmanni* (Bolivar)

FIGURE 4,a

*Cyrtoxiphus stolzmanni* Bolivar, *Anal. Soc. Española Hist. Nat.*, vol. 10, p. 475, 1881.

SPECIMENS EXAMINED: BOLIVIA: Blanca Flor, January 1922 (1♂), Mann. PERÚ: Chanchamayo, Apr. 29, 1948 (1♂), May 5, 1948 (1♂), Schunke; Pucallpa, Oct. 17, 1947 (1♀), Schunke; Tingo María, November 1949 (1♂, 2♀♀), December 1949 (1♀), February 1950 (1♀), Allard.

*Anaxipha championi* (Saussure)

*Cyrtoxiphus championi* Saussure, in Godman and Salvin, *Biologia Centrali-Americana*, vol. 1, p. 236, pl. 11, fig. 41, 1897.

SPECIMENS EXAMINED: BOLIVIA: Tumupasa, December 1921 (1♂), Mann.

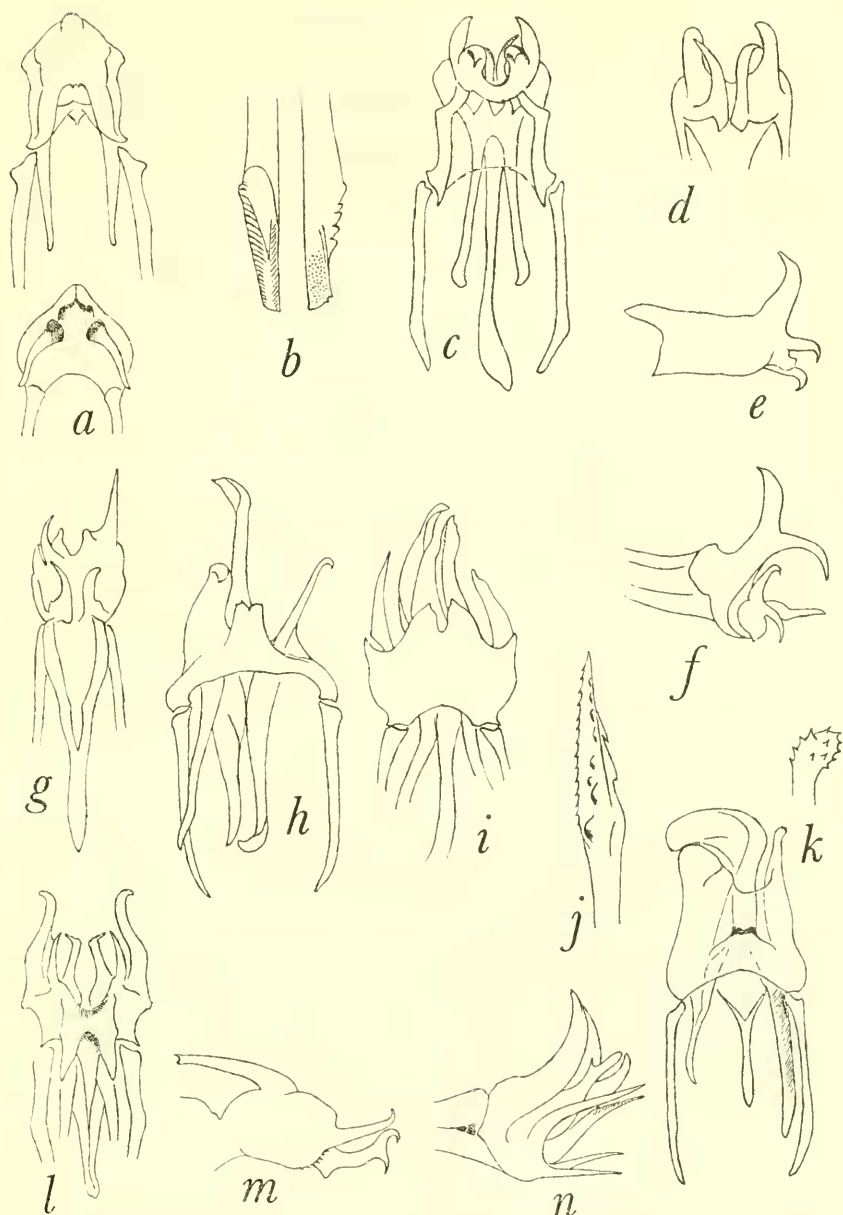


FIGURE 5.—Male genitalia (unless otherwise noted) of: *a*, *Amblyrhetus nodifer*, new species, upper figure as seen from above, lower figure as seen from beneath; *b*, extremity of ovipositor of *Amblyrhetus nodifer*, new species, left figure as seen from above, right figure as seen from beneath; *c*, *Aphonomorphus telskii* Saussure, viewed from above; *d*, same, inferior part; *e*, same, side view; *f*, *A. stipatus*, new species; *g*, *A. socius*, new species; *h*, *S. dissimilis*, new species; *i*, *A. obscurus*, new species; *j*, extremity of ovipositor of *A. obscurus*, new species; *k*, *A. deceptor*, new species; *l*, *m*, *A. schunkei*, new species *n*, *A. allardi*, new species.

*Anaxipha gracilis* (Scudder)

*Trigonidium gracile* Scudder, Proc. Boston Soc. Nat. Hist., vol. 12, p. 331, 1869.

SPECIMENS EXAMINED: PERÚ: Pucallpa, 1948 (1♀), Schunke.

*Anaxipha annulipes* Hebard

*Anaxipha annulipes* Hebard, Proc. Acad. Nat. Sci. Philadelphia, vol. 76, p. 233, pl. 10, fig. 17, 1924.

SPECIMENS EXAMINED: PERÚ: Tingo María, December 1949 (1♀), Allard.

*Anaxipha allardi*, new species

FIGURE 4,b,c

Types: Holotype: Male; Tingo María, Perú, November 1949, Allard (USNM 62071). Allotype: Tingo María, Perú, December 1949, Allard (♀) (USNM).

DESCRIPTION: Small, yellow varied with light brown drawings. Head short, convex, adorned with a wide brown band which is divided by a fine longitudinal yellow line, and a narrower brown band behind each eye; frontal rostrum provided with two rows of five or six long bristles. Face scarcely longer than wide, yellow adorned with two brown spots along the internal margin of the antennal sockets which are separated only by a narrow yellow band; in the middle these spots are yellow; beneath each eye there is a brown band extending a little on the side of the clypeus; the center of the latter is spotted with brown. Eyes rounded, rather strongly projecting; ocelli small, the anterior one a little before the extremity of the rostrum. Antennae light brownish. Palpi yellow; 4th joint of the maxillary palpi shorter than 3d, 5th widely triangular, straightly truncated at apex.

Pronotum transverse, very feebly narrowing in front, with anterior and posterior margin straight; disk feebly convex, faintly pubescent; general coloration brown with a narrow yellow line in the middle and two wide bands of the same color on the sides; anterior and posterior margins narrowly yellow with a series of small brown spots; lateral lobes yellow with small brown spots. Legs yellow, spotted with light brown, pubescent. Anterior and median femora with a weak brown

---

FIGURE 6.—a-d, Male genitalia of *Aphonomorphus adjunctus*, new species: a, as seen from above, holotype; b, same, paratype; c, inferior part, holotype; d, side view, holotype. e, Extremity of ovipositor of *A. adjunctus*, new species. f-i, Reticulation of middle of elytron in: f, *Euaphonus peruvianus* Saussure, g, *Aphonomorphus stipatus*, new species; h, *A. schunkei*, new species; i, *A. adjunctus*, new species. j, Genitalia of male *Euaphonus peruvianus* Saussure from Chanchamayo; k, extremity of *E. peruvianus* from Pucallpa; l, genitalia of male *Paraphonus vicinus*, new species; m, male *Rhipipteryx difformipes*, new species, abdominal extremity; n, same, median leg; o, *Rhipipteryx vicinus*, new species, abdominal extremity of male; p, *Rhipipteryx femoratus*, new species, anterior leg; q, same, abdominal extremity of male; r, *R. schunkei*, new species, abdominal extremity of male.

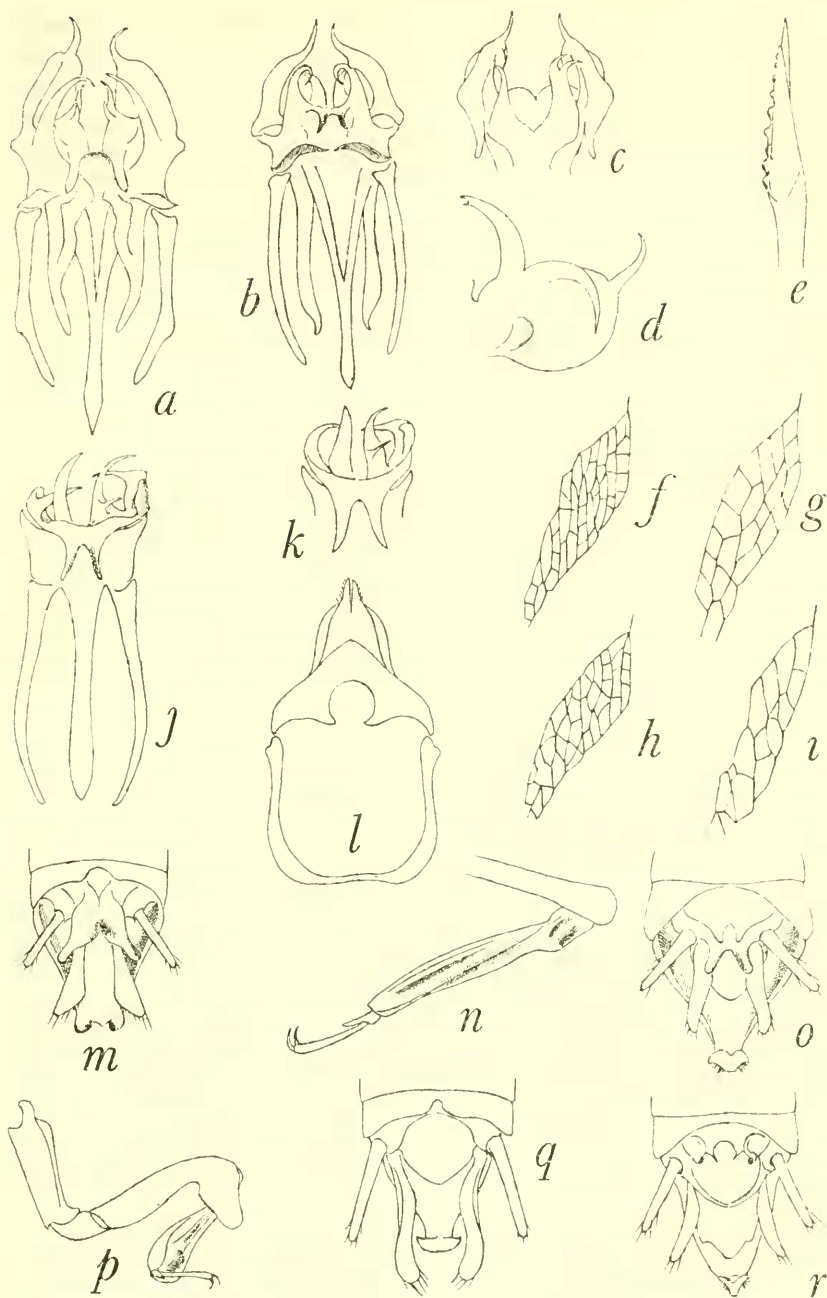


FIGURE 6. - For explanation see facing page.



ring near the apex; anterior tibiae perforated with two foramina in the female (macropterous condition), without these tympana in the male (micropterous). Posterior femora relatively short and thick, adorned on the external face with a longitudinal brown band along the inferior margin and numerous oblique bands of the same color, more or less anatomosed. Spines of the posterior tibiae long, spotted with brown at base and at apex.

MALE: Abdomen blackish beneath; subgenital plate with posterior margin narrowly yellow, presenting a slight median projection. Elytra extending a little beyond the abdominal extremity, yellowish, translucent; mirror very large,  $1\frac{1}{2}$  times as long as wide, with anterior angle strongly acute, the widest part much beneath the middle; diagonal vein very short, sinuated; lateral field nearly transparent, with three veins. No wings.

FEMALE: Elytra very pale yellow, translucent; the part of the left elytron which is covered by the right one is smooth, completely transparent; dorsal field with four rather strong, almost longitudinal veins, which are separated by feebly marked false vein; transverse veinlets rather numerous, strong, forming large, rectangular, rather regular areolae. Wings lengthily caudate. Abdomen yellowish. Ovipositor rather short, wide, with apical valves smooth, occupying almost half the total length.

DIMENSIONS (in millimeters): Length of body 5.0; length with wings, ♀ 9.5; posterior femur, 4.2; elytra, ♂ 3.7, ♀ 3.5; ovipositor, 2.2.

REMARKS: A small species well characterized by its relatively short shape, its thick posterior femora, its coloration pale with well marked light brown drawings.

*Anaxipha latefasciata*, new species

HOLOTYPE: Female; Rosario, Lake Rogagua, Bolivia, Oct. 28–Nov. 9, 1921, Mann (USNM 62072).

FEMALE: Small, yellow with a wide brown band extending from the head to the extremity of the elytra. Head short, flattened, brown above; face longer than wide, yellow. Eyes feebly lengthened longitudinally. Antennae and palpi yellow; 1st joint of antennae spotted with brown on the internal face; 4th joint of maxillary palpi much shorter than 3d, 5th short and wide, triangular, straightly truncated at apex.

Pronotum feebly narrowing in front, with anterior margin convex, posterior margin straight; disk rather strongly convex, furrowed in the middle, feebly pubescent, shining; all the median part is occupied by the longitudinal brown band; lateral lobes yellow, with straight inferior margin, rounded anterior angle. Abdomen brown above,

yellow beneath. Ovipositor rather long; apical valves occupying half the total length, very finely denticulated.

Legs yellow. Anterior tibiae perforated with two oval tympana.

Elytra extending to the apex of abdomen, yellow shining with the wide brown band which extends on the whole length, with veins widely separated and somewhat projecting; dorsal field with four diverging veins, the internal rather joining the 2d; transverse veinlets very few, forming a few irregular, large cells; lateral field with four veins, one of which is incomplete. Wings yellowish, caudate.

Length of body 4.2 mm.; length with wings 8 mm.; posterior femur 3.5 mm.; elytra 3 mm.; ovipositor 1.6 mm.

REMARKS: This species presents a rather irregular elytral venation as in the species of the *nitida* group; the coloration is characteristic. The shape of the eyes and palpi is somewhat cyrtoxiphoid.

*Anaxipha nigripennis*, new species

FIGURE 4,*d*

HOLOTYPE: Male; Chanchamayo, Department of Junin, Perú, elevation 1,200 meters, Apr. 29, 1948, Schunke (USNM 62073).

MALE: Wholly blackish with yellow legs. Head dark brown, feebly flattened above; face black, shining. Eyes rounded, projecting, scarcely lengthened dorsoventrally. Antennae yellow with two first joints blackish. Palpi yellow; last joint of maxillary palpi moderately widened at apex, darkened.

Pronotum very wide and strongly narrowing in front, furrowed in the middle; lateral lobes with straight inferior margin, much-rounded anterior angle. Abdomen blackish; subgenital plate feebly truncated at apex.

Anterior legs wanting. Median legs yellow with a few small rufous brown spots towards the apex of femora and on the tibiae. Posterior femora rather thick, presenting fairly numerous small brown spots; spines and apical spurs of the tibiae brown, the spurs rather short; metatarsi yellow with brown extremity; 2d joint brown.

Elytra blackish brown; mirror large, as wide as long, the internal margin regularly rounded; diagonal vein very weakly sinuated, very close to the oblique vein towards the apex; lateral field blackish with three veins, the first of which is strongly diverging from the *Sc*; the space between these two veins is divided by six straight veinlets. No wings.

Length of body 6.8 mm.; posterior femur 5.0 mm.; elytra 4.8 mm.

REMARKS: This species is close to *platyptera* Hebard; the general shape is a little less wide and the posterior femora have no brown band in the middle.

*Anaxipha nigerrima*, new species

FIGURES 2,a, 4,e

Types: Holotype: Female; Fundo Sinchono, about 40 miles southwest of Pucallpa, Río Ucuyali, Perú, Aug. 14, 1947, Schunke (USNM 62074). Allotype: Same locality as holotype, Aug. 29, 1947, Schunke (♂) (USNM). Paratypes: Same locality as holotype, Sept. 5, 1947, Schunke (1♂); Divisoria, elevation 1,600 meters, about 80 miles southwest of Pucallpa, Río Ucuyali, Perú, 1947, Schunke (1♀); Tingo María, Perú, December 1949, Allard (1♂) (USNM).

FEMALE: Blackish, shining with yellowish legs, the posterior femora adorned in the middle with a blackish brown ring. Head blackish brown, shining, almost glabrous; vertex sloping, flattened. Face brown. Eyes projecting, rounded. Antennae yellow with blackish two first joints. Palpi blackish; 4th joint of maxillary palpi much shorter than 3d, 5th scarcely equal to the 3d, triangular.

Pronotum blackish with a fine whitish pubescence and some long black bristles, chiefly along the anterior margin; general shape rather neatly narrowing in front; anterior margin rather convex, posterior margin feebly sinuated; disk rather strongly convex, feebly furrowed in the middle; lateral lobes with straight inferior margin, much-rounded anterior angle. Abdomen dark brown. Ovipositor rather short, with apical valves equaling almost half the total length, very finely denticulated. Cerei brownish with yellow base.

Legs rather long. Anterior femora yellowish with a fine black pubescence, feebly darkened at apex; tibiae blackish, with strongly widened basal half; auditory foramina large, chiefly the internal; tarsi blackish, the metatarsus very long, the 3d joint very short. Median femora like the anterior ones; tibiae not so strongly darkened. Posterior femora long, rather narrow, yellowish, with a rather wide blackish ring in the middle; tibiae yellowish, darkened at top, with rather short grayish spines; apical spurs short, dark gray, the superointernal wide, acute at apex, extending only to the middle of the metatarsus; the latter is long, grayish with yellowish base.

Elytra as long as abdomen, rather narrow, wholly of a shining black; veins of the dorsal field rather projecting, oblique, widely separated, plain, uniting at apex, except the *Cu* which is furcate near the extremity; transverse veinlets very distant; lateral field black, with three plain, parallel veins. Wings caudate; anterior field blackish with white apex.

Length of body 6.8 mm.; length with wings 12.0 mm.; posterior femur 5.1 mm.; elytra 5.0 mm.; ovipositor 2.0 mm.

MALE (allotype): Head, pronotum, and legs as in the female. Elytra with parallel margins; mirror large and wide,  $1\frac{1}{4}$  times as long

as wide; chords long, parallel, nearly straight; diagonal vein rather short, convex, very close to the oblique vein towards the apex.

Length of body 7.0 mm.; length with wings 12.5 mm.; posterior femur 5.5 mm.; elytra 6.0 mm.

This species is close to *A. nitida* Chopard, from French Guiana; it is larger, without any trace of the whitish spot which exists towards the middle of the elytra, the elytral venation is a little more regular. It also differs from *annulipes* Hebard by the absence of a second brown ring on the posterior femora and by the wings, which are whitish at top.

*Anaxipha schunkei*, new species

FIGURE 4, f

HOLOTYPE: Male; Fundo Sinchono, about 40 miles southwest of Pucallpa, Río Ucuyali, Perú, Aug. 27, 1947, Schunke (USNM 62075).

MALE: Dark testaceous with a few feeble light brown spots on the legs and elytra. Head rufous, a little flattened above; frontal rostrum as wide as the 1st joint of antennae, a little rounded at top. Face as long as wide, testaceous, smooth. Eyes slightly lengthened antero-posteriorly; ocelli very small, the anterior one placed a little before the extremity of the rostrum. Antennae yellow with small light brown rings. Palpi yellowish; 5th joint of the maxillary palpi large, triangular, somewhat darkened at apex, which is straightly truncated.

Pronotum rufous, slightly narrowing in front; disk feebly convex, furrowed in the middle; lateral lobes concolorous, with convex inferior margin, much-rounded anterior angle. Abdomen testaceous. Genitalia somewhat asymmetric, forming two very long horns.

Legs rather long, yellowish covered with a fine brown pubescence. Anterior and median femora very narrowly darkened at apex and adorned a little before with a small brown ring; anterior tibiae very feebly dilated at base, presenting on the external face a rather small oval tympanum; superior face adorned with a small brown spot at base and another a little larger about the anterior third; apex armed with two inferior spurs; apex of the metatarsus and second joint of the tarsus brown. Median legs similar to the anterior ones. Posterior femora moderately swollen, adorned with three feebly marked brown bands, one a little before the middle, the second about the apical fourth, the third at apex. Posterior tibiae and extremity of the legs in very bad state.

Elytra large, extending a little beyond the abdominal extremity; their color is amber yellow, adorned with brownish spots in the anterior angle of the mirror, on the chords, near the posterior margin, and towards the middle of the cubital vein; mirror very large, nearly as long as wide; diagonal vein short, sinuated. No wings.



Length of body 5.0 mm.; posterior femur 5.0 mm.; elytra 4.2 mm.

REMARKS: This species belongs to the *simulacrum* type; the anterior tibiae being very feebly dilated and the eyes almost cyrtoxiphoid. The shape of the genitalia is very peculiar.

### Genus *Phylloscyrtus* Guerin, 1844

#### *Phylloscyrtus cicindeloides* Gerstaecker

*Phylloscyrtus cicindeloides* Gerstaecker, Stett. Ent. Zeit., vol. 24, p. 428, 1863.

SPECIMENS EXAMINED: BRAZIL: Manáos (1 ♂), Merrill.

#### *Phylloscyrtus elegans* Guerin

*Phylloscyrtus elegans* Guerin, Iconographie du règne animal de G. Cuvier . . . , p. 333, 1844.

SPECIMENS EXAMINED: PERÚ: Tingo María, December 1949 (2♀♀), Allard.

### Genus *Metioche* Stal, 1877

#### *Metioche boliviana*, new species

FIGURES 2,b, 4,g,j

TYPES: Holotype: Male; Blanca Flor, Río Beni, Bolivia, Mann (USNM 62076). Allotype: Rurrenabaque, Río Beni, Bolivia, November 1921, Mann (♀) (USNM).

MALE: Rather dark brownish, feebly pubescent. Head a little wider than pronotum in front, without any ornament; vertex sloping; frontal rostrum as wide as 1st antennal joint. Face a little longer than wide, brown, smooth. Eyes rather strongly projecting, rounded. Antennae and palpi brown.

Pronotum with straight anterior and posterior margins, nearly parallel sides; disk convex, furrowed in the middle, presenting a fine whitish pubescence and long bristles on the sides; lateral lobes of the same color as the disk. Abdomen brownish, pubescent; subgenital plate narrowing a little posteriorly. Genitalia short, in the shape of a very plain tong.

Legs of a dirty yellow; anterior and median femora with a feebly marked brown ring before the apex; posterior femora without any ornament; anterior tibiae perforated with two foramina. Posterior tibiae somewhat darkened with rather long spines; superointernal apical spur longer than half the metatarsus.

Elytra long and narrow, with parallel and rather regularly spaced longitudinal veins; *Cu* furcate near the apex; transverse veinlets rather regular, scarce; lateral field darker than the dorsal field, presenting three regularly spaced veins. Wings rather long, brown.

Length of body 5.7 mm.; length with wings 8.5 mm.; posterior femur 4.5 mm.; elytra 4.2 mm.



**FEMALE:** Almost similar to the male. Maxillary palpi yellowish, with 4th joint a little shorter than the 3d, 5th long, triangular. Elytral venation similar to the male but the veins a little less straight, curved at base and at apex, *Cu* more neatly furcate. Ovipositor short and wide, the apical valves occupying half the total length.

Length of body 5.4 mm.; length with wings 8.7 mm.; posterior femur 4.5 mm.; elytra 4.2 mm.; ovipositor 2 mm.

*Metioche peruviana*, new species

FIGURE 4,*h,i*

**HOLOTYPE:** Male; Tingo María, Perú, February 1950, Allard (USNM 62077).

**MALE:** Very close to the preceding. Differing from it in the longer legs, the 5th joint of maxillary palpi shorter and wider and the shape of genitalia (fig. 4,*i*). The elytral venation is quite similar to that of the female of *boliviana*.

Length of body 5.7 mm.; length with wings 9.5 mm.; posterior femur 5 mm.; elytra 4.5 mm.

**Genus *Rhcnogryllus* Chopard, 1925**

*Rhcnogryllus annulipes*, new species

FIGURES 1,*b*, 4,*k*

**HOLOTYPE:** Male; Tingo María, Perú, February 1950, Allard (USNM 62078).

**MALE:** Light testaceous, varied with brown. Head a little wider than pronotum, feebly flattened above, adorned with four weak brown bands; frontal rostrum as wide as 1st antennal joint. Face triangular, as long as wide, rufous, smooth. Eyes rather strongly projecting, feebly lengthened dorsoventrally; ocelli very small. Antennae yellowish with small brown rings. Palpi yellowish, feebly darkened at apex; 4th joint of maxillary palpi shorter than 3d, 5th in the shape of a long triangle, moderately widened at apex which is straightly truncated.

Pronotum with parallel sides, anterior margin very feebly convex, bordered with long bristles; posterior margin straight; disk feebly convex, furrowed in the middle, testaceous with two brownish spots near the posterior margin; lateral lobes with straight inferior margin, adorned with a wide longitudinal brown band; surface covered with a rather abundant whitish pubescence and a few long bristles on the sides. Abdomen brownish above, yellow beneath. Cerci yellow.

Legs rather long, yellowish with brown rings. Anterior and median tibiae with a brown ring a little before the apex; tibiae with two brown rings, the anterior ones nonperforated, not at all dilated at base; extremity of the metatarsus and 2d tarsal joint brown. Posterior

femora rather thick, yellowish adorned with a wide brown ring towards the middle and another one quite near the apex; tibiae with three brown rings; tibial spines brown; external apical spurs yellow, internal spurs brown; metatarsi long, yellow with brown top, 2d joint brown.

Elytra extending almost to the apex of abdomen, testaceous with brown extremity; dorsal field presenting six quite straight, parallel projecting veins; transverse veinlets very few; lateral field with four regularly distant veins. No wings.

Length of body 5 mm.; posterior femur 4.6 mm.; elytra 2.7 mm.

REMARKS: This is the first species of the genus *Rhienogryllus* found in America.

## Family ENEOPTERIDAE

### Key to the American genera

1. Apical spurs of the posterior tibiae long, the median longer than the other two either side (*Eneopterinae* group) . . . . . 2
- Externoapical spurs of the posterior tibiae very short, almost equal in length; internal spurs very different in length, the superior the longest (*Podoscirtinae* group) . . . . . 5
2. Posterior metatarsus long . . . . . 3
- Posterior metatarsus short . . . . . 4
3. Posterior femora very long; elytra extending beyond the apex of abdomen.

**Eneoptera** Burmeister

Posterior femora rather short; elytra extending only to the apex of abdomen.

**Ponea** Hebard

4. Frontal rostrum three times as wide as the first antennal joint; elytra of male a little shorter than abdomen, with a perfect mirror . **Ligypterus** Saussure
- Frontal rostrum scarcely wider than the first antennal joint; male elytra without mirror . . . . . **Eneopteroides**, new genus
5. Posterior tibiae armed with strong spines but without denticles at base or before the spines . . . . . **Stenogryllus** Saussure
- Posterior tibiae armed with spines and denticles . . . . . 6
6. Posterior tibiae armed with two or three spines towards the apex.

**Chremon** Rehn

Posterior tibiae armed with five or six spines occupying more than the distal half . . . . . 7

7. Body strongly elongate; posterior metatarsus long with two rows of denticles (anterior tibiae nonperforated; elytra of male small, without tympana).

**Cylindrogryllus** Saussure

General shape variable but not so elongate; posterior metatarsus rather short . . . . . 8

8. Elytra of the male provided with a mirror . . . . . 9
- Elytral venation similar in both sexes . . . . . 18

9. Head globular; vertex short, without rostrum, transversely carinate (anterior tibiae perforated either side) . . . . . **Phyllogryllus** Saussure

Head with a prominent rostrum between the antennae . . . . . 10

10. Head vertical; mouth directed downwards . . . . . 11

Head horizontal; mouth directed forwards (anterior tibiae perforated on the external face) . . . . . **Ectotrypas** Saussure

- |  |                           |
|--|---------------------------|
| 11. Elytra of the male with several oblique veins . . . . .  | 12                        |
| Elytra of the male with one or two oblique veins, broken in the shape of<br>a V . . . . .  | 16                        |
| 12. Oblique veins parallel; anterior tibiae perforated on both faces . . . .   | 13                        |
| Oblique veins flexuous, nonparallel . . . . .  | 14                        |
| 13. Elytra of the male almost without apical field (female apterous, with very<br>short ovipositor, without apical valves) . . . . .     | <b>Hapithoides</b> Hebard |
| Elytra of the male with well-developed apical field . . . .  | <b>Diatrypa</b> Saussure  |
| 14. Body very long and slender. Ovipositor without apical valves. Wings<br>much longer than the elytra; tibiae perforated on both faces. |                           |

### Stenoeccanthus Chopard

Body moderately lengthened. Ovipositor flattened with distinct apical valves. Wings slightly longer than the elytra. Oblique veins of the male united at base by a corneous callus . . . . . 15

15. Frontal rostrum narrow; body cylindrical; elytra of male with numerous oblique veins . . . . . **Paroeecanthus** Saussure  
Frontal rostrum wide. . . . . **Amblyrhctus** Kirby
16. Anterior tibiae perforated on both faces . . . . . **Orocharis** Uhler  
Anterior tibiae perforated on the internal face only . . . . . 17
17. Surface of the body smooth and shining; ocelli placed on a transverse line.

## Hapithus Uhler

Surface of the body, head, and legs wrinkled and strongly pubescent; ocelli disposed as a triangle; median femora and tibiae strongly compressed.

Laurepa Walker

- |  |    |
|--|----|
| 18. Anterior tibiae perforated on one face at least . . . . .        | 19 |
| Anterior tibiae without foramina . . . . .                           | 24 |
| 19. Anterior tibiae perforated on both faces . . . . .               | 20 |
| Anterior tibiae perforated on one face only . . . . .                | 21 |
| 20. General shape long and narrow; ovipositor without apical valves. |    |

## Euscyrthus Guérin

General shape rather strong and wide; ovipositor with differentiated apical valves . . . . . **Podoscirtodes**, new genus

21. Anterior tibiae perforated on the external face only. . . **Heterecous** Saussure  
Anterior tibiae perforated on the internal face only . . . . . 22  
22. Auditory foramina apert, elliptical. . . . . 23  
Auditory foramina concate. . . . . **Euaphonus** Hebard  
23. Shape very slender; head narrow, deeper than wide. **Stenaphonus** Saussure  
Shape and head normal. . . . . **Aphonomorphus** Rehn  
24. Ovipositor with apical valves flattened, truncated at apex.

Tafalisca Walker

Apical valves of ovipositor acute at apex . . . . . 25

25. Elytra of female very short or absent (male unknown). **Parametrypa** Brunner  
 Elytra extending to the apex of abdomen . . . . . 26
26. General shape as in *Aphonomorphus* . . . . . **Paraphonus** Hebard  
 General shape very narrow with parallel sides . . . . . **Nessa** Walker

Genus *Eneoptera* Burmeister, 1838

*Eneoptera surinamensis* (De Gcer)

*Gryllus surinamensis* De Geer, Mémoires pour servir à l'histoire des insectes, vol. 3, p. 519, pl. 43, fig. 1, 1773.

SPECIMENS EXAMINED: 45 specimens, including both sexes, of this very common species are included from the following localities: BOLIVIA: Covendo; Espia; Huachi; Rurrenabaque. BRAZIL: Manáos; Forteleza. PERÚ: Chanchamayo; Fundo Chela; Pucallpa; Tingo María.

*Eneoptera guyanensis* Chopard

*Eneoptera guyanensis* Chopard, Bull. Soc. Ent. France, vol. 36, p. 14, 1931.

SPECIMENS EXAMINED: BRAZIL: Manáos (1 ♂, 1 ♀), Merrill.

Genus *Eneopteroides*, new genus

DESCRIPTION: General aspect as in *Eneoptera*; legs shorter; frontal rostrum much narrower, scarcely wider than the first antennal joint; 5th joint of maxillary palpi in the shape of a very wide triangle. Anterior tibiae perforated on the internal face with a long foramen. Elytra of the male without a mirror.

TYPE OF GENUS: *Eneopteroides flavifrons*, new species.

*Eneopteroides flavifrons*, new species

FIGURE 4, l

HOLOTYPE: MALE; Pucallpa, Río Ucuyali, Perú, Dec. 9, 1947, Schunke (USNM 62079).

MALE: Head a little wider than the pronotum, short, vertex sloping; blackish brown above with four short yellow lines on the occiput; frontal rostrum scarcely wider than the 1st antennal joint, yellow. Face triangular, as long as wide, presenting between the eyes a wide yellow band; inferior part brown, shining. Palpi rather short, brown; 4th joint of the maxillary palpi equaling the 3d, feebly widening at apex; 5th joint very large, triangular with straight apical margin. Antennae yellow. Eyes rounded, rather strongly projecting; ocelli rather small, disposed almost on a straight line.

Pronotum transverse, feebly narrowing in front, with anterior margin feebly concave, posterior margin nearly straight; disk almost flat, brownish bordered on each side by a narrow yellow band; lateral lobes blackish with convex inferior margin. Abdomen yellowish above, brownish beneath; subgenital plate long, furrowed in the apical third only, slightly notched at apex. Cerci yellowish mottled with brown. Genitalia long and narrow, a little truncated at apex (fig. 4, l).

Legs short. Anterior femora almost black; tibiae thick, feebly compressed, dark brown, lighter above chiefly near the base; internal face presenting a rather large, oval, narrow auditory foramen; metatarsus extremely short, brown; 2d joint flattened, 3d long and slender, yellow. Median legs similar to the anterior ones but with the femora yellowish at base. Posterior femora short and thick, present-

ing on the external face a longitudinal brown band; inferior edges mottled with brown. Posterior tibiae strongly pubescent, armed with four spines on each margin, strongly serrulated at base and between the spines; external apical spurs very short; superointernal spur almost equal to the metatarsus, median spur a little shorter, inferior half as long as the superior; metatarsus very short, armed above with two strong external denticles, one internal; apical spurs very long, equal in length; 3d joint long and slender.

Elytra finely pubescent, brownish with the radial vein yellow; median vein mottled with yellow and brown; intercalated triangle blackish. Veins rather strongly marked, very oblique; five branches on the cubital vein, lost towards the apex in the reticulation; this is formed of long, narrow, rather regular areolae; lateral field very dark brown; *Sc* bearing six branches, the 3d branch is divided (on the left side only). Wings extending very little beyond the apex of elytra.

Length of body 17.5 mm.; length with wings 21.5 mm.; pronotum 2.6 mm.; width of pronotum 4.0 mm.; posterior femur 11.0 mm.; elytra 14.5 mm.

### Genus *Diatrypa* Saussure, 1874

#### *Diatrypa pallidilabris* Chopard

FIGURE 4,*m*

*Diatrypa pallidilabris* Chopard, Ann. Soc. Ent. France, vol. 81, p. 415, 1913.

SPECIMENS EXAMINED: PERÚ: Pucallpa, Feb. 20, 1948 (1♀), Schunke; Tingo María, December 1949 (1♀), February 1950 (1♂), Allard.

#### *Diatrypa allardi*, new species

FIGURES 1,*d*, 4,*n*

HOLOTYPE: Male; Tingo María, Perú, January 1950, Allard (USNM 62081).

MALE: Uniformly testaceous. Head flattened with frontal rostrum a little narrower than the 1st antennal joint, somewhat rounded at apex. Face as long as wide, yellowish. Eyes feebly projecting; ocelli very small. Antennae yellow with small brown rings. Palpi wanting.

Pronotum weakly narrowing in front, with anterior and posterior margins straight, ciliated; disk rather strongly convex, finely pubescent; lateral lobes darker than the disk, long with feebly sinuated inferior margin, rounded angles. Abdomen dark brown; subgenital plate rather short subtruncate at apex. Genitalia, small, narrowing, deeply notched at apex (fig. 4,*n*).



Legs of the same color as the body, pubescent. Anterior femora and tibiae short, compressed; tibiae feebly dilated at base, perforated with two oval tympana; metatarsi very short. Median legs a little longer than the anterior, almost of the same shape. Posterior femora rather short and thick, adorned in the middle of the external face with a longitudinal brown band; tibiae finely serrulated, armed with four yellow spines on each margin; external apical spurs very short; median and chiefly superointernal spur longer but not so long as half the metatarsus; the latter is rather long, very pubescent, almost carinate above, armed with four denticles placed on a single row; apical spurs rather long, chiefly the internal; 3d joint very slender.

Elytra extending somewhat beyond the abdominal extremity; anal field large; archet broken at right angle; mirror much wider than long, angulate in front, rounded backwards in the shape of a long oval, divided in the middle by a horizontal vein; diagonal vein short, feebly curved; chords parallel; seven feebly sinuated oblique veins; apical field rather short, presenting four veins and very few transverse veinlets; lateral field wrapping; Sc bearing nine branches; space between Sc and R crossed by regularly parallel veinlets. Wings not longer than the elytra.

Length of body 12.0 mm.; posterior femur 8.2 mm.; elytra 8.5 mm.; width of elytra 4.3 mm.

*Diatrypa latipennis*, new species

FIGURE 4,o

HOLOTYPE: Male; Tingo María, Perú, December 1949, Allard (USNM 62080).

MALE: Very close to the preceding but of a lighter color and with elytra more strongly widening backwards. General color of a light testaceous; pubescence very fine, rather abundant. Head flattened above; face as long as wide, testaceous. Antennae yellow with feebly marked small brown rings. Palpi testaceous; 4th joint of maxillary palpi shorter than 3d, 5th equaling the 3d, feebly enlarged and straightly truncated at apex. Pronotum feebly narrowing in front, with posterior margin feebly convex. Legs as in *allardi*. Elytra amber-colored, nearly transparent, rather strongly widening caudad, with brown veins; archet feebly curved; mirror strongly transverse with acute anterior angle (right in *allardi*); seven oblique veins; apical field very short with three veins. Wings not visible beyond the elytra. Subgenital plate narrowing and very feebly notched backwards. Genitalia (fig. 4,o) of the same type as *allardi* but narrower at apex.

Length of body 10.5 mm.; length with wings 12.0 mm.; posterior femur 8.0 mm.; elytra 9.0 mm.; width of elytra 5.0 mm.

*Diatrypa schunkei*, new speciesFIGURE 4,*p*

HOLOTYPE: Male; Pucallpa, Río Ucuyali, Perú, Mar. 9, 1948, Schunke (USNM 62082).

MALE: A little larger than the preceding species. Head small, flattened above, finely pubescent; frontal rostrum a little narrower than the 1st antennal joint, strongly darkened. Face as long as wide, yellowish. Eyes feebly projecting cephalad; ocelli very small. Antennae yellow with small brown rings. Palpi yellowish; 4th joint of maxillary palpi a little shorter than 3d, 5th equaling the 3d, rather strongly widening and obliquely truncated at apex.

Pronotum rather strongly narrowing in front, with convex posterior margin; disk feebly convex, uniformly testaceous, finely pubescent; lateral lobes rather low, with feebly sinuated inferior margin, strongly rounded angles. Genitalia rounded at apex (fig. 4,*p*).

Legs short, of the same color as the body, pubescent. Anterior tibiae feebly dilated, perforated with two rather large, oval foramina. Posterior femora rather thick, without any parallel apical part; tibiae armed with four spines on each margin; superointernal apical spur extending scarcely to the middle of the metatarsus; the latter is rather long, armed above with four external denticles, one internal denticle; apical spurs long, the internal extending nearly to the apex of 3d joint.

Elytra extending fairly beyond the apex of abdomen, narrowing towards the apex; mirror of the same shape as in *allardi*, but not so transverse; six oblique veins, feebly curved, disposed rather regularly along the archet; chords short, parallel, the first united to the mirror by a small vein in the angle; apical field rather long, with five veins and a wide reticulation; lateral field wrapping; space between *Sc* and *R* regularly widening from the base nearly to the apex, crossed by 10 very regularly distant veinlets; *Sc* bearing 11 branches. Wings a little longer than the elytra.

Length of body 14.5 mm.; length with wings 17.5 mm.; posterior femur 8.0 mm.; elytra 12.2 mm.

REMARKS: Very close to *allardi*; larger with less transverse mirror, apical field longer, space between the diagonal vein, the mirror and the first chord a little wider.

*Diatrypa minuta*, new species

HOLOTYPE: Female; Tingo María, Perú, Feb. 19, 1950, Allard (USNM 62083).

FEMALE: Very small for the genus; blackish brown with a white band on the elytral edge. Head as wide as pronotum, brown, flat-

tened and finely shagreened above; frontal rostrum a little wider than half the 1st antennal joint, flat with parallel margins. Face short and wide, brown, shining. Eyes horizontally lengthened; ocelli very small. Antennae rather thick, the six 1st joints blackish brown, the rest yellow with very distant small brown rings. Palpi short, yellowish with apex of each joint feebly darkened; 4th joint of the maxillary palpi shorter than 3d, 5th triangular, slightly longer than wide.

Pronotum as long as wide, with straight anterior margin, very weakly convex posterior margin; disk feebly convex, blackish, smooth; anterior margin narrowly rufous; lateral lobes very long, with straight inferior margin, much-rounded anterior angle. Abdomen brown; subgenital plate narrowing and feebly notched at apex. Ovipositor rather long, straight; apical valves somewhat flattened, wide, truncated at apex and armed with a large tooth on the external angle and two teeth on the apical margin.

Legs rather long, yellowish. Anterior femora presenting on the internal face a somewhat irregular longitudinal brown band; tibiae adorned above with brown, feebly enlarged at base, perforated with two oval tympana, the external being much larger than the internal; metatarsus very short, scarcely longer than the 2d joint. Median legs similar to the anterior ones. Posterior femora strongly dilated at base, rather short; tibiae armed on each margin with four spines scarcely longer than the denticles which are relatively very strong; apical spurs short; metatarsus yellow with brown apex, compressed, armed above with four denticles, apical spurs short and strong.

Elytra a little longer than the abdomen, dark brown with a whitish band along the edge, extending on the extremity; dorsal field with feebly oblique, regularly spaced veins; *R* bearing two branches, *Rs* simple, *M* and two anal veins curled at their extremity; transverse veinlets scarce and rather irregular; lateral field very dark brown; *Sc* with two branches. Wings scarcely exceeding the elytra.

Length of body 9.0 mm.; length with wings 10.0 mm.; posterior femur 6.4 mm.; elytra 6.5 mm.; ovipositor 6.3 mm.

### Genus *Amblyrhetus* Kirby, 1906

#### *Amblyrhetus nodifer*, new species

FIGURE 5, a, b

TYPES: Holotype: Male; Chanchamayo, Department of Junin, Perú, elevation 1,200 meters, May 4, 1948, Schunke (USNM 62084). Allotype: Tingo María, Perú, November 1949, Allard (♀) (USNM).

MALE: General shape rather short and thick; color uniformly rufous brown; finely pubescent. Head rather small, short; vertex weakly flattened, scarcely sloping; frontal rostrum as wide as 1st antennal joint. Face as long as wide, rufous. Antennae thick, yellowish at

base, becoming brown towards the middle. Palpi rufous brown, short; 4th joint of maxillary palpi shorter than 3d, 5th as long as 3d, feebly enlarged with parallel margins. Eyes feebly projecting; ocelli very small.

Pronotum  $1\frac{1}{2}$  times as wide as long, with feebly concave anterior margin, slightly narrowing in front; disk almost flat, uniformly rufous brown; lateral lobes high, with straight inferior margin, rounded anterior angle, posterior angle completely obliterated. Abdomen dark brown above, rufous beneath; subgenital plate large, narrowing subacute at apex, nonfurrowed. Genitalia in the shape of a rather regular triangular plate (fig. 5,b).

Legs short, of the same color as the body. Anterior and median femora compressed, slightly darkened at apex; anterior tibiae almost prismatic, rather strongly dilated at base, perforated with two large, oval tympana, the external being still larger than the internal; apex of the anterior and median tibiae armed with three very small spurs; metatarsi very short. Posterior femora short, very thick, blackish at top; tibiae furrowed above, armed with five external spines, the two distal ones being very close, four long internal spines; denticles at base and between the spines strong. Metatarsus rather short, thick, armed above with two external denticles, one internal denticle at apex; apical spurs rather short, subequal in length.

Elytra lighter than the body, of a pale testaceous, finely pubescent, extending a little beyond the extremity of the body, feebly enlarged at apex; mirror in the shape of a wide, feebly oblique oval, divided in the middle by a straight vein; archet weak, strongly broken before the angle; anal veins much stronger than the archet; four oblique veins forming two well distant groups; the two internal of these veins are long, united at base by a strong nodosity; the two external ones are short, emerging from the archet in the deep curve before the angle; diagonal vein long, feebly oblique; chords rather long, the second strongly convex, the first united to the mirror by a short vein; apical field rather long, with four veins and a rather regular reticulation; lateral field wrapping; *Sc* bearing 12 branches. Wings a little longer than the elytra.

FEMALE: Head, pronotum, and legs as in the male. Abdomen blackish above, yellowish mottled with brown beneath; subgenital plate wide, notched at top in a semicircle. Ovipositor short, thick, feebly curved upwards; apical valves flattened, rectangular, truncated at top. Elytra presenting rather regularly spaced oblique veins; four are coming from the *Cu* and one from *Cu.p*; areolae rather regular, pentagonal, disposed in two series between each vein; *Sc* bearing eight branches.

DIMENSIONS: Length of body, ♂ 14.0 mm., ♀ 15.0 mm.; length with wings, ♂ 17.0 mm., ♀ 19.0 mm.; pronotum, ♂ 3.0 mm., ♀ 3.2



mm.; posterior femur, ♂ 7.6 mm., ♀ 8.2 mm.; elytra, ♂ 12.0 mm., ♀ 14.0 mm.

REMARKS: This species is close to *A. brevipes* Saussure, from Colombia; the male elytron presents four oblique veins instead of the two in *brevipes*, and the archet is strongly angulate, apical field with veins more distant; the ovipositor of the female reminds rather the shape of *capitatus* Saussure.

### Genus *Aphonomorphus* Rehn, 1903

#### *Aphonomorphus telskii* (Saussure)

FIGURE 5,c-e

*Aphonus telskii* Saussure, Mission scientifique au Mexique . . . Recherches zoologiques, pt. 6, section 1 (Orthoptères), p. 511, 1874.

SPECIMENS EXAMINED: BOLIVIA: Tumupasa, December 1921 (1 ♂), Mann.

#### *Aphonomorphus stipatus*, new species

FIGURE 5,f, 6,g

HOLOTYPE: Male; Cavinás, Río Beni, Bolivia, January 1922, Mann (USNM 62085).

Male: Color of a dark testaceous brown with the median vein yellow marked with about 10 small brown spots. Fifth joint of the maxillary palpi securiform, as long as wide. Dorsal field of the elytra presenting a rather regular reticulation; the areolae are long, narrow, disposed on three rows between each vein about the middle of the elytron; towards the apex the areolae are wider; veins rather well marked among the reticulation; their number is six, of which four come from the median vein, the other two from the cubital; *Sc* bearing eight branches. Subgenital plate furrowed in the middle, feebly notched at apex. Anterior and median legs feebly mottled with brown; posterior femora with inferior margin spotted with brown. Genitalia of the same type as *telskii* with longer teeth (fig.5,f).

Length of body 19.5 mm.; length with wings 30.5 mm.; posterior femur 13.0 mm. elytra 21.0 mm.

#### *Aphonomorphus socius*, new species

FIGURE 5,g

HOLOTYPE: Male; Tingo María, Perú, Feb. 10, 1950, Allard (USNM 62086).

Male: Very close to the preceding but coloration darker; space between *Sc-R* and *R-M* blackish, shining; antennae very neatly annulated; top of the forehead blackish; 5th joint of the maxillary palpi a little longer. Areolae of the dorsal field of elytra narrow but less numerous, disposed on two rows only between the veins; these are



very feebly marked. Genitalia quite different, somewhat asymmetrical with long straight points (fig. 5,g).

Length of body 18.5 mm.; length with wings 28.5 mm.; posterior femur 13.5 mm.; elytra 19.5 mm.

*Aphonomorphus dissimilis*, new species

FIGURE 5,h

HOLOTYPE: Male; Reyes, Bolivia, October 1921, Mann (USNM 62087).

MALE: Very light brown, the median vein of elytra very feebly mottled but with a very neat brown spot at base. Posterior margin of pronotum subangulate. Fifth joint of maxillary palpi scarcely longer than wide, securiform with superior margin much longer than the inferior, feebly concave. Sides and inferior face of abdomen light yellow, mottled with brown, the spots confluent on the median line, forming a brown band. Veins of the dorsal field of elytra very weak; reticulation long and narrow. Genitalia strongly asymmetrical, with three very long processes (fig. 5,h).

Length of body 16.5 mm.; length with wings 26.0 mm.; elytra 20.5 mm.

*Aphonomorphus obscurus*, new species

FIGURE 5,i,j

TYPES: Holotype: Male; Cachuela Esperanza, Bolivia, March 1922, Mann (USNM 62088). Allotype: Ixiamas, Bolivia, December 1921, Mann (♀).

MALE: Very dark brown with lighter legs. Head uniformly brown; vertex slightly flattened; ocelli united by a small carina in the shape of a Y. Face also very dark, smooth. Palpi light rufous; 5th joint of maxillary palpi securiform, a little longer than wide, darkened at top, with superior margin feebly concave. Antennae brown with small light rings. Posterior margin of pronotum convex, not at all angulate. Elytra very finely pubescent; dorsal field with very regular venation; veins feebly oblique and scarcely visible on the reticulation; areolae long and narrow; median vein spotted with yellow. Abdomen almost black beneath; subgenital plate long, nonfurrowed. Genitalia of the same type as the preceding, not so strongly asymmetrical (fig. 5,i).

FEMALE: Quite similar to the male but much larger. Ovipositor very long and slender; apical valves very narrow, acute; superior valves finely denticulated, inferior with two large teeth (fig. 5,j).

Length of body 20.0 mm. (approximate, abdomen retracted); length with wings 31.5 mm.; posterior femur 14.0 mm. elytra 23.0 mm.; ovipositor 25.0 mm.

*Aphonomorphus deceptor*, new speciesFIGURE 5,*k*

Types: Holotype: Male; Pucallpa, Río Ucuyali, Perú, Sept. 16, 1947, Schunke (USNM 62089). Paratype: Same locality as holotype (1 ♂) (MNHN).

MALE: Rather large; uniformly light brown; median vein marked with regularly alternate brown and yellow small spots. Face yellow, somewhat spotted with brown; 5th joint of maxillary palpi as long as wide, securiform. Antennae light brown with feebly visible yellow rings. Auditory foramina relatively narrow, the anterior tibiae presenting a long furrow on the internal face. Subgenital plate long, furrowed, notched at apex. Elytral veins difficult to see among the reticulation which is extremely close. Genitalia completely asymmetrical with big, rounded median process (fig. 5,*k*).

Length of body 19.0 mm.; length with wings 30.0 mm.; posterior femur 13.0 mm.; elytra 21.0 mm.

REMARKS: Very close to *A. stipatus* with elytral reticulation still closer; genitalia completely different from all the other species.

Another male from the same locality is quite similar to the type.

*Aphonomorphus schunkei*, new speciesFIGURES 5,*l,m*, 6,*h*

HOLOTYPE: Male; Pucallpa, Río Ucuyali, Perú, Nov. 29, 1947, Allard (USNM 62090).

MALE: Coloration rather light testaceous brown; vertex very feebly darkened; 5th joint of maxillary palpi a little longer than wide, securiform. Antennae light testaceous, very feebly annulated. Elytral venation rather confused; all the veins are concolorous except a few very small brown spots; areolae relatively very large, disposed on one or two rows between the principal veins. Abdomen brown beneath; subgenital plate furrowed. Genitalia presenting a superior bifid bridge and six long processes (fig. 5,*l,m*).

Length of body 18.5 mm.; length with wings 25.5 mm.; posterior femur 11.5 mm.; elytra 16.5 mm.

*Aphonomorphus allardi*, new speciesFIGURE 5,*n*

HOLOTYPE: Male; Tingo María, Perú, December 1949, Allard (USNM 62091).

MALE: Very close to the preceding; of a somewhat darker color, with better marked veins; areolae of the elytra not so wide; 5th joint of the maxillary palpi not longer than wide. Abdomen yellow beneath. Genitalia with a very large superior part, acute at apex (fig. 5,*n*).

Length of body 21.0 mm.; length with wings 27.5 mm.; posterior femur 12.0 mm.; elytra 20.0 mm.

*Aphonomorphus adjunctus*, new species

FIGURE 6, *a-e, i*

Types: Holotype: Male; Pucallpa, Río Ucuyali, Perú, Feb. 3, 1948, Schunke (USNM 62092). Allotype: Chanchamayo, La Merced, Perú, Feb. 4, 1949, Schunke (♀) (USNM).

MALE: Very close to the preceding; median vein very neatly spotted and numerous small brown spots in the angles formed by the veins and the transverse veinlets. Vertex very dark brown; face yellow; abdomen brown beneath. Legs feebly mottled with brown. Lateral field of the elytra much lighter than the superior part. Genitalia quite different from *allardi* but rather close to *schunkei* (fig. 6, *a-d*).

Length of body 20.5 mm.; length with wings 27.0 mm.; posterior femur 11.8 mm.; elytra 20.0 mm.

FEMALE: Larger and a little darker than the male. Ovipositor long, straight, with apical valves narrow, acute, presenting six strong, rounded teeth on the inferior margin; superior valves with two triangular teeth on the internal face (fig. 6, *e*).

Length of body 16.5 mm.; length with wings 29.0 mm.; posterior femur 11.0 mm.; elytra 19.0 mm.; ovipositor 13.0 mm.

*Aphonomorphus elegans*, new species

HOLOTYPE: Female; Tingo María, Perú, December 1949, Allard (USNM 62093).

FEMALE: A long and rather narrow species. Head pale brown with four feebly marked yellow lines on the occiput; very feebly convex above; vertex darkened between the antennae; frontal rostrum narrow, scarcely wider than the 1st antennal joint. Face yellow, as long as wide. Antennae yellow with small brown rings. Palpi yellowish, rather short; 4th joint of maxillary palpi shorter than 3d, 5th very short, wide, triangular, straightly truncated at apex. Eyes projecting, feebly lengthened dorsoventrally; ocelli contiguous, the anterior narrow, oval, the lateral ones rounded.

Pronotum posteriorly a little wider than long, rather strongly narrowing in front; posterior margin subangulate; disk yellowish brown with a few small brown spots near the median line and two larger spots of the same color near the anterior angle; anterior and posterior margins spotted with brown; limit between the disk and the lateral lobes marked by a yellow band; lateral lobes long, of the same color as the disk with a few brown spots. Abdomen yellowish brown; subgenital plate small, feebly notched at apex. Ovipositor rather long, slender, feebly curved; apical valves narrow, the inferior with seven strong teeth.

Legs yellowish brown mottled with brown, pubescent. Anterior tibiae rather strongly dilated at base, presenting a large long internal auditory foramen. Posterior femora very long, feebly swollen, presenting above three or four brown spots; tibiae armed with five external, nine internal spines; denticulations at base and between the spines very weak, scarcely visible among the abundant pubescence; apical spurs as usual in *Aphonomorphus*. Metatarsi short, armed above with two external denticles, one internal denticle, apical spurs very long.

Elytra very long and narrow, light brown with a few small brown spots on the median vein; principal veins strongly oblique, feebly visible in a rather close reticulation, formed of long areolae. Wings extending rather strongly beyond the elytra, mottled with brown.

Length of body 15.0 mm.; length with wings 27.0 mm.; pronotum 3.0 mm.; posterior femur 12.5 mm.; elytra 18.5 mm.; ovipositor 13.5 mm.

REMARKS: This species is remarkable by its slender general shape, its long and narrow posterior femora, and the armature of the posterior tibiae.

#### Genus *Podoscirtodes*, new genus

DESCRIPTION: General aspect as in *Aphonomorphus* but somewhat shorter. Anterior tibiae perforated on both faces, the external tympanum oval in shape, the internal one elongate, narrow. Elytral venation similar in both sexes, presenting no mirror in the male; subcostal vein bearing four or five branches. Wings feebly overreaching the elytra.

TYPE OF GENUS: *Podoscirtus americanus* Saussure, 1878.

#### Genus *Euaphonus* Hebard, 1928

##### *Euaphonus peruvianus* (Saussure)

FIGURE 6,f,j,k

*Aphonus peruvianus* Saussure, Mission scientifique au Mexique . . . Recherches zoologiques, pt. 6, section 1 (Orthoptères), p. 511, 1874.

SPECIMENS EXAMINED: PERÚ: Chanchamayo, June 6, 1948 (1 ♂), Sept. 12, 1948 (1 ♂), Schunke; Pucallpa, Feb. 10, 1948 (1 ♂), Schunke.

#### Genus *Paraphonus* Hebard, 1928

##### *Paraphonus vicinus*, new species

FIGURE 6,l

TYPES: Holotype: Male; Fundo Sinchono, about 40 miles southwest of Pucallpa, Río Ucuyali, Perú, Aug. 24, 1947, Schunke (USNM)

62094). Allotype: Tumupasa, Bolivia, December 1921, Mann (♀) (USNM). Paratype: Chanchamayo, Perú, Apr. 29, 1948, Schunke (1 ♂) (MNHN).

MALE: General aspect of a small *Aphonomorphus*; light brown with half a score blackish spots on the median vein. Head above blackish brown with seven yellow lines; frontal rostrum sloping, cannaliculated, narrower at apex than the 1st antennal joint, its margins provided with long hairs. Face yellowish. Eyes projecting; lateral ocelli large, oval, anterior one smaller; they are united by a yellow band extending laterally to the eyes. Antennae yellow with a few small brown rings. Palpi yellowish with a weak brown ring at apex of 3d and 4th joints; 5th joint feebly securiform, as wide at apex as long. Pronotum a little wider in front than long, feebly widening backwards; anterior margin nearly straight, posterior margin sinuated; disk feebly convex, pubescent, light brown with two large yellowish impresses; lateral lobes almost twice as long as high, with inferior margin feebly ascending backwards, anterior angle rounded; color blackish in the superior half, yellowish in the inferior one. Abdomen brownish above, yellowish beneath; epiproct quadrangular; subgenital plate rather large, feebly narrowing backwards with apical margin slightly concave. Cerci yellowish. Genitalia triangular in their general shape, divided in the apical third in three lobes, the median being curved upwards and feebly divided at apex.

Legs rather short, yellowish with a few small brown spots, strongly pubescent. Anterior tibiae without any trace of a tympanum. Posterior femora rather strongly dilated, very feebly striated on the external face. Posterior tibiae armed with four<sup>\*</sup> external, five internal spines, strongly denticulated at base and between the spines; external apical spurs very short; superointernal spur almost twice as long as the median; metatarsus very short, armed with three external denticles and one internal denticle besides the apical spurs, which are long and equal in length.

Elytra light brown, finely pubescent, with very conspicuous dark spots on the cubital vein; veins feebly oblique and regularly spaced; *Cu* bearing two branches; *Cu.p* divided near the proximal fourth; transverse veinlets numerous and rather regular, a little darker than the principal veins; lateral field a little lighter than the dorsal field; *Sc* bearing three branches. Wings a little longer than the elytra.

Length of body 15.5 mm.; length with wings 21.0 mm.; pronotum 2.5 mm.; posterior femur 11.0 mm.; elytra 14.0 mm.

REMARKS: This species seems close to the type of the genus (*Paraphonus cophus* Hebard) but it is not so robust in its general shape, with wings a little longer; from Hebard's description, it seems that the genitalia are of a quite different shape.



## Superfamily TRIDACTYLOIDEA

## Family RHIPPTERYGIDAE

Genus *Rhippteryx* Newman, 1834

The collection contains several species of this genus which are nearly similar in the general shape and coloration but quite different in the shape of the abdominal extremity of the male. The females are almost impossible to separate.

*Rhippteryx difformipes*, new species

FIGURE 6,m,n

HOLOTYPE: Male; Divisoria, elevation 1,600 meters, about 80 miles southwest of Pucallpa, Perú, 1947, Schunke (USNM 62095).

MALE: Small, of a dull black color. Antennae composed of 10 joints, black; 3d to 6th joints yellowish above, 9th joint almost completely yellow; last joint longer than the preceding, black. Pronotum with lateral margins rather narrowly tinged with yellowish. Metanotum prolonged caudad in a sharp point. The three first abdominal tergites are partly united, presenting a strong, rounded, shining tumefaction; 4th tergite with a  $\lambda$ -shaped projection; 10th tergite prolonged in a plate strongly divided at apex with projecting, rounded angles. Cerci extending a little beyond the plate, cylindrical; process of the paraprocts not so long as the subgenital plate, flattened, a little widening at apex. Subgenital plate narrowing towards the extremity, which is notched with a small, acute, median projection.

Anterior legs black; tibiae strongly compressed with an internal groove in which the tarsus is located. Median femora for the most part yellow with black top; tibiae strongly out of shape, roundly dilated at base, then compressed, twisted with external face furrowed above. Posterior femora black; tibiae yellowish; large apical spurs long and slender; metatarsus a little shorter, compressed, acute at apex.

Elytra dull black; wings very elongate, black on the anterior margin, with iridescent posterior field.

Length of body with wings 7-8 mm.

*Rhippteryx vicinus*, new species

FIGURE 6,o

TYPES: Holotype: Male; Divisoria, elevation 1,600 meters, about 80 miles southwest of Pucallpa, Perú, 1947, Schunke (USNM 62096). Paratypes: Same data as holotype (3♂♂); Fundo Sinchono, Perú, Aug. 15, 1947, Schunke (1♂) (USNM).

MALE: Very close to the preceding. Differing by the yellow band of the pronotum, which is wider, and chiefly by the shape of the ab-

dominal extremity. Ninth tergite presenting in the middle of the posterior margin a narrow notch, the margins of which are elevated in the shape of a small acute tubercle; process of the 10th tergite rather short, divided into two diverging lobes; apex of the subgenital plate notched, each margin presenting six small teeth, median part dilated in a small projecting plate. Median tibiae of the same shape as in the preceding species but a little longer.

Total length 7.5 mm.

*Rhipipteryx femoratus*, new species

FIGURE 6,p,q

TYPES: Holotype: Male; Fundo Sinchono, about 40 miles southwest of Pucallpa, Río Ucuyali, Perú, Aug. 9, 1947, Schunke (USNM 62097). Allotype: Same locality as holotype, Aug. 28, 1947, Schunke (♀) (USNM). Paratypes: Chanchamayo, Perú, Jan. 27, 1949 (1♂), Apr. 26, 1948 (1♀), Schunke; Fundo Sinchono, about 40 miles southwest of Pucallpa, Río Ucuyali, Perú, Aug. 25, 1947 (1♀) Schunke; Pucallpa, Perú, July 31, 1947 (1♂), Schunke (USNM).

MALE: Very close to both preceding species in the general shape and coloration. Antennae with joints 2 to 6 presenting above a large yellow spot; last joint almost completely yellow, preceding joint black. Pronotum with rather wide, regular yellow lateral band; disk presenting a small median yellow spot. Anterior femora strongly curved and presenting at apex of the inferointernal margin a large, yellow, rounded lobe, which is feebly denticulated at base. Median femora long and slender, compressed, wholly black; tibiae also long and compressed, of normal shape, furrowed in the middle. Abdomen with 9th tergite presenting in the middle a small rounded notch; epiproct very large, flat, ogive-shaped; 10th tergite presenting only very small lateral processes; process of the paraprocts extending a little farther than the subgenital plate, compressed, somewhat enlarged and rounded at apex. Subgenital plate ending in two small diverging lobes, armed with five or six bristles.

FEMALE: Similar to the male but the anterior femora scarcely enlarged at apex. Subgenital plate subacute.

DIMENSIONS: Total length, ♂ 8.0 mm., ♀ 6.8 mm.

REMARKS: The male of this species is quite different from the preceding species in the shape of the anterior legs.

*Rhipipteryx schunkei*, new species

FIGURE 6,r

TYPES: Holotype: Male; Chanchamayo, Perú, elevation 1,200 meters, Apr. 24, 1948, Schunke (USNM 62098). Allotype: Same

locality as holotype, May 1948, Schunke (♀) (USNM).

MALE: Differing from *vicinus* in the shape of the abdominal extremity. Last joint of the antennae black.

FEMALE: Cerci cylindrical; process of the paraprocts as long as the cerci, enlarged, rounded at apex. Subgenital plate short, transverse, with posterior margin straight on the sides, strongly convex, subangulate in the middle. Ovipositor with curved, strongly acute valves, the inferior ones with a strong basal tooth.

DIMENSIONS: Total length, ♂ 7.2 mm., ♀ 7.0 mm.

### Family TRIDACTYLIDAE

#### Genus *Tridactylus* Olivier, 1789

##### *Tridactylus australis* Bruner

*Tridactylus australis* Bruner, Ann. Carnegie Mus., vol. 10, p. 357, 1916.

SPECIMENS EXAMINED: PERÚ: Pucallpa, Río Ucuyali, Oct. 8, 1947 (2♂♂, 2♀♀), Mar. 2, 1948 (1♂), Schunke.

### References

#### BRUNER, LAWRENCE

1916. South American crickets, Gryllotalpoidea and Achetoidea. Ann. Carnegie Mus., vol. 10, pp. 344-428.

#### CAUDELL, A. N.

1918. On a collection of Orthoptera (exclusive of the Locustidae) made in central Peru by N. Iconnicoff and C. Schunke. Ins. Insc. Menstr., vol. 6, pp. 1-70.

#### CHOPARD, L.

1912. Contribution a la faune des Orthoptères de la Guyane française. Ann. Soc. Ent. France, vol. 81, pp. 401-432.
1917. Etude des gryllides du Museo Civico di Storia Naturale di Genova. Ann. Soc. Ent. France, vol. 86, pp. 509-574.
1929. Descriptions de gryllides américains nouveaux. Rev. Chil. Hist. Nat., vol. 33, pp. 522-531.
1933. Ergebnisse einer zoologischen Sammelreise nach Brasilien, insbesondere in das Amazonasgebiet, ausgeführt von Dr. H. Zerny. Ann. Naturh. Mus. Wien, vol. 46, pp. 243-253.
1937. Notes sur les gryllides et tridactylides du Deutsches Entomologisches Institut et descriptions d'espèces nouvelles. Arb. Morph. Tax. Ent. Berlin-Dahlem, vol. 4, pp. 136-152.
1948. Note sur les orthoptères cavernicoles du Mexique. Ciencia, pp. 67-70.
1949. Ordre des orthoptères, In Grassé, Traité de zoologie, vol. 9, pp. 617-722.
1954. Orthoptera: Gryllidae et Tridactylidae. In Titschack, Beiträge zur Fauna Perus, vol. 4, pp. 13-27, 6 figs.

#### HEBARD, MORGAN

1924. Studies in the Dermaptera and Orthoptera of Ecuador. Proc. Acad. Nat. Sci. Philadelphia, vol. 76, pp. 109-248.

- 1928a. Studies in the Dermaptera and Orthoptera of Colombia. Pt. 5. Orthopterous family Gryllidae. Trans. Amer. Ent. Soc., vol. 54, pp. 79-124.
- 1928b. The group *Luzarac* of the subfamily Phalangopsinae (Orthoptera Gryllidae). Trans. Amer. Ent. Soc., vol. 54, pp. 1-56.
- 1928c. Studies in the Gryllidae of Panama (Orthoptera). Trans. Amer. Ent. Soc., vol. 54, pp. 233-294.
1933. Studies in the Dermaptera and Orthoptera of Colombia. Supplement to Nos. 1-5. Trans. Amer. Ent. Soc., vol. 59, pp. 13-67.
- HUBBELL, THEODORE H.
1938. New cave crickets from Yucatan, with a review of the Pentacentrinae and studies on the genus *Amphiacusta* (Orthoptera Gryllidae). Carnegie Inst. Washington Publ. No. 491, pp. 191-233.
- MACCREAGH, GORDON
1926. White waters and black. 404 pp., 1 map, 73 pls.
- MELLO-LEITAO, C. DE
1937. Un gryllide et deux mantides nouveaux du Bresil (Orth.). Rev. de Ent., vol. 7, pp. 11-18.
- REHN, J. A. G.
1913. A contribution to the knowledge of the Orthoptera of Argentina. Proc. Acad. Nat. Sci. Philadelphia, pp. 273-379.
1915. A further contribution to the knowledge of the Orthoptera of Argentina. Proc. Acad. Nat. Sci. Philadelphia, pp. 270-292.
- 1918a. On Dermaptera and Orthoptera from Southern Brazil. Trans. Amer. Ent. Soc., vol. 44, pp. 181-222.
- 1918b. On a collection of Orthoptera from the State of Para, Brazil. Proc. Acad. Nat. Sci. Philadelphia, pp. 144-236, pls. 1, 2.
1920. Records and descriptions of Brazilian Orthoptera. Proc. Acad. Nat. Sci. Philadelphia, pp. 214-293, pls. 10, 11.
1930. A new genus of Eneopterinae from Hispaniola (Orthoptera: Gryllidae). Trans. Amer. Ent. Soc., vol. 56, pp. 87-92.
- REHN, J. A. G., AND HEBARD, MORGAN
1912. A revision of the genera and species of the group *Mogoplistii* (Orthoptera: Gryllidae) found in North America north of the Isthmus of Panama. Proc. Acad. Nat. Sci. Philadelphia, pp. 184-234.
- SAUSSURE, H. DE
1870. Recherches zoologiques pour servir a l'histoire de la faune de l'Amerique centrale et du Mexique. Etudes sur les insectes orthoptères. 533 pp., 8 pls.
1877. Mélanges orthoptérologiques. V. Gryllidae. Mém. Soc. Genève, vol. 25, pp. 1-352, pl. 11-15.
1878. Mélanges orthoptérologiques. VI. Gryllidae (pt. 2). Mém. Soc. Genève, vol. 25, pp. 368-702, pl. 16-19.
1899. Gryllidae. In Godman and Salvin, Biologia Centrali-Americana. Orthoptera, vol. 1, pp. 198-284, pls. 11-13.
- SNYDER, THOMAS E.
1926. Termites collected on the Mulford biological exploration to the Amazon Basin, 1921-1922. Proc. U. S. Nat. Mus., vol. 68, art. 14, 76 pp., 3 figs., 3 pls.
- TITSCHACK, ERICH
1951. Reisebericht. In Titschack (ed.), Beiträge zur Fauna Perus, vol. 1, pp. 1-403, 1 map, 223 figs.